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The Western Kentucky University *Student Honors Research Bulletin* is dedicated to scholarly involvement and student research. These papers are representative of work done by students from throughout the university.

James T. Baker, Director
University Honors Program

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PREFACE

WRITING TO LEARN, LEARNING TO WRITE

In the Prologue to his collection of essays, *The Flamingo's Smile: Reflections in Natural History*, Stephen Jay Gould writes: "I write these essays primarily to aid my own quest to learn and understand as much as possible about nature in the short time allotted." Stephen Jay Gould is writing to learn. He is also, of course, researching to learn, drawing on his own observations and the work of others, specifically the writing of others, since writing is the way scientists, as well as historians, physicians, psychologists, home economists, creative writers and others, convey information from one person to another, down through the generations.

As students we learn to write in Freshman English; at least that is the course in which we are introduced to the skills of writing. But our education in writing continues long beyond our freshman year, as we write critical reviews for drama courses, interpretive essays for art history, case studies for sociology, laboratory reports for chemistry, journals for philosophy and ethics, research papers for the courses in our majors. Along the way, in all these courses, students learn to write, and they write to learn. When the play has been viewed and reflected upon; when the chemistry experiment has been completed and we ponder results; when the notes for the case study have been taken: that is the point at which learning to write and writing to learn come together. We have fragments, impressions, opinions—our own and others'—and now we must begin to create the final product which will belong to the individual writer and to all the readers with whom she will share her work. The knowledge comes in a piece at a time, from analysis of data, from reading the works of others in the field, from experiments, from observation, from interviews. The writer must take the pieces and create something new. The process is often complex: pre-writing, outlining or other organizational strategies, drafting, perhaps more research to fill in the gaps, re-drafting, copy-editing, revising—and then the final draft, the work with which the writer must "go public." From this process, the writer will learn more about how to write, and he will discover what it is he knows about his subject, what it is that he can add to the body of knowledge in his field.

Whatever else the university may be, it is first of all a place for discovery. Language is the mode for discovery, and writing is the way discovery is articulated. The student papers in this volume are representative of the best examples of writing to convey discovery. These student writers are on their own "quest to learn and understand as much as possible...in the short time allotted." They are writing to learn, and learning to write.

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ATTITUDES TOWARD THE NEED FOR COMPUTER LITERACY

Marcia Kesselring

1.

For centuries man has sought ways to assist and enhance the powers of the human brain. Over five thousand years ago the people of the Orient began the development of mechanical computation with the manually operated storage system known as the abacus. Although the abacus was refined, it wasn't until the mid 1600's that real improvement came in the form of Pascal's "arithmetic machine." Still, it could only count. The "arithmetic machine" did seem to be an inspiration though, and by 1694 Gottfried Leibniz, using George Boole's mechanized logic, had completed his "Stepped Reckoner" which could also multiply, divide, and extract square roots. The "Stepped Reckoner" could be considered the father of the modern computer as it established the advantage of the binary system over the decimal system for mechanical computation.

Charles Babbage's "Analytic Engine" appeared in 1835. Adapting the Jacquard loom mechanism of punched cards, it wove algebraic patterns just as the loom wove flowers and leaves. By 1890 Herman Hollerith had improved the machine by magnetic reading of the cards.

In 1937 Babbage's plans and drawings were rediscovered. They detailed principles of sequential control, branching, looping, and duel arithmetic and storage units with automatic printout. The next three decades saw the metamorphosis of the computer from a glorified mechanical calculator to the thousands-of-times-faster electronic computers of the 1960's. This new computer was able to handle both numerical and alphabetic information. (Encyclopedia Britanica, 1982, vol. 4, p. 1046)

In the late 1940's an expert predicted that half a dozen computers would be enough to meet the ultimate needs of the United States but by the mid 1960's, bulky and expensive though they were, more than 35,000 were already in service in industry, government, science, and education. (Miller & Sippl, 1978). The world had entered a new information age. Still, the average business man, the majority of teachers, and most scientists were far removed from computers; and there was little impact on citizens.

During the late 1960's computers became a little smaller and much faster, but the development of the silicon chip in 1974 revolutionized the industry. The central processing unit of a mainframe computer that cost tens, even hundreds, of thousands of dollars and occupied large rooms in the sixties could now be built on a few chips of silicon smaller than postage stamps. (Graham, 1983). This miniturization of electronic circuitry has led to small, cheap, powerful, and reliable computers within the financial reach of small businesses and even individuals. Advancing into the 1980's, computers have become even more powerful, less expensive, and considerably faster. With the recent advent of bonded chips there is promise of even greater speed in the 90's and beyond.

This great proliferation of minicomputers and microcomputers has touched everyone. Now there is hardly any aspect of everyday life that is not affected by computers. Whether we go to the supermarket, the bank, the doctor, or to work, school, or play, they are there. Computers have become a vital tool with ever growing applications and a pervasive influence in everyday life. "In the 1980's, understanding computers is no longer a problem of prestige . . . . Survival on the job, survival in the classroom, and survival in society depends on it." (Covvey, McAlister, 1982, p. 4)

The computer is commonly viewed as a tool for simplifying and enriching lives. But, as with the automobile, telephone, and television before it, many individuals react to this technology with feelings of anxiety, alienation, and inadequacy. Because it is a sophisticated technology, demanding a great deal of interaction from its user, many are fearful of approaching it. (Baumgarte, 1983)

The purpose of this study was to determine the attitudes of children in this three county area of central Kentucky toward computers as they see them today. It is concerned with the possibility of greater acceptance as the children advance toward maturity. Are educators helping the youngsters to become familiar and comfortable with this vital tool of the future? Also, do the children foresee a real need to be able to use the computer to attain the jobs of their children when they become adults? The other major question addressed is the possibility of differing attitudes between male and female students.

2.

Although there is a proliferation of material dealing with computer literacy, most of it tends to deal with definitions and curriculum for achieving said literacy in terms of any particular definition. Very little research has been done addressing the attitudes of students toward the computer. Even less has been done dealing in attitudes toward the necessity for computer literacy.

In November 1983 the National Labor Statistics Bureau projected that in ten years 75% of all jobs would require interaction with the computer. (Vacca, 1983). The following data from April 1981 *Futurist* relative to jobs, past and future, dramatically illustrates a significant trend. In 1970 90% of the populace was employed in agriculture; in 1920 53% worked in manufacturing; and by 1950 30% of the labor force was working in service related industries. (Vacca, 1983). The move from agriculture to manufacturing sent shock waves through society; and, to a lesser extent,

the shift to service industries changed our lifestyles. Technological advances in the area of electronic intelligence have had a profound effect on humanity over the last decade.

Schools must respond to the new technology as America experiences the transition to an information intensive society. A failure by our educational system to respond could see an entire class of "new disadvantaged" through computer illiteracy. (Gantt, 1985). A study by William Fellmy and Everett Nicholson dealing with computer priorities in education resulted in a consensus of opinion among educators and businessmen that development of computer litercy for all students should be top priority. (Educational Technology, 1985, p. 49)

As the information age expands, the most acute problem will not be information overload, but the gap that is developing between those persons who can function in the information society and those who cannot. The haves of the computer society will be those who keep themselves informed both of the capabilities and the limitations of the new technology as it develops. The have nots will be those, for one reason or another, do not or can not learn to cope with it. (Gantt, 1985)

Cyberphobia and cyberphrenia, excessive fear of the new technology and addiction to it, are both commentaries on today's society. Philip Zimbardo's studies indicate that because of its abilities to mimic social interaction and because of the predictability of its responses the computer may act, at least minimally, to meet our needs for one another without the responsibilities of social interaction. (*Psychology Today,* 1980) The cyberphobic on the other hand is threatened by having to deal with what he perceives as an all powerful "thinking machine" he does not know how to control. (Toris, 1984)

Aside from intrinsic personality barriers to the development of computer literacy, research has also shown inequities in opportunity for computer learning. In 1983 a University of Minnesota study found that, though opportunities are increasing, low-income, female, and rural students are especially disadvantaged in attaining computer literacy in school. (Anderson, 1983)

In 1983 Quality Education Data, Inc. projected 85% of all school districts to have microcomputers for the 1984-85 school year. They also found the 12,000 wealthiest schools in the nation were 4 times more likely than the 12,000 poorest schools to have computers for student use. Among 13-year-olds less than 17% of students from rural and ghetto areas report use of school computer equipment in contrast to 32% from urban/rich areas. It also found only 12% in the south with school computer experience as compared with 24% in the west and 17%-19% in the north and central areas. (Anderson, 1983)

Inequities of race tend to be closely linked with economic status and region of the country. However, there are some indications that the type of computer usage may differ with poor minority schools using more drill and practice type activities and poor white schools teaching more programming. This would tend to make below average students the most intensive users in minority schools and above average students in the predominantly white schools. (Anderson, 1983)

Another major concern has been gender inequity. Lockheed, Nielsen, and Stone (1983) and Anderson, Klassen, Krohn, and Smith-Cunnien (1982) both reported that young women in secondary school were less likely than young men to enroll in computer classes. The 1982 National Assessment of Science shows males and females reporting nearly the same use of computers in school. It might be concluded that the girls have a different emphasis in their computer contacts. (Anderson, 1983)

Jo Shuchat Sanders suggests several reasons for this phenomenon among 7th and 8th grade girls. 1. We project computers as a male domain. In a total of 144 photographs appearing in a given month in 4 widely circulated computer magazines only 17% depicted active female users. Gregory Smith director of Educational Marketing for Apple computers was recently quoted as saying "The buyers of Apple computers are 98% male. We do not feel that women represent any great untapped audience." 2. Much current software tends to be of the annihilation type. In a study with 361 seventh and eighth graders it became clear that while the boys preferred the "action" program girls rated the language arts programs higher. 3. Girls prefer to be where their friends are. Girls' computer lunch period or "girls only" and "boys only" after school sessions reportedly increased female attendance. When girls in New Jersey and Oregon were asked how they liked best to work with computers both groups greatly preferred working together with a friend over single use or any other method. (*The Computing Teacher,* 1985)

In the few studies dealing with attitudes sex differences were not so apparent as sex stereotypes where computers were viewed somewhat as a male domain. (Vermette, Orr, and Hall, 1986)

Other attitudinal findings showed that most students considered computers friendly, polite, and fair. Although 46% said everyone should know how to use a computer and 73% said anyone can learn to use computers and 90% said it is a good idea to have computers in schools, a good many pupils backed down when it came to themselves. 49% said learning to use computers was waste of time and 45% responded that they were not interested in computers. Negative attitudes may stem from a lack of confidence stemming from a lack of skills mastery. (Vermette, Orr, and Hall, 1986)

Another factor that came repeatedly to the foreground was human perception of computers. The point being emphasized was that technology is amoral. It is neither good nor bad. The computer is merely a sophisticated tool and can only do what it is instructed to do. It has no creative power of its own. Just as with a hammer or any other tool we can learn to use it to build a better world—or we can use it to destroy. (Robinson, 1982)

Considering the trends of the past few years and projections for the future it seems that being comfortable with computers and being able to use basic word processing and programming skills may well become the dividing line

between those who are able to function comfortably in society and those who must always struggle.

The cyberphobic and the cyberphrenic, although at opposite ends in the scale of attitudes toward the computer, appear to be reacting to the same social forces that threaten to isolate an individual in society.

Current studies indicate that though opportunities are increasing there is still a great deal of inequity by race, gender, economic status, and area of residence. Although students feel good about computers in general, there is evidence of some negative attitudes in regard to their views of the effects of computers on them personally.

The computer is perhaps the most powerful tool man has ever created. It is important, however, to remember that computers are not "intelligent." They are only machines that perform the tasks they have been instructed to undertake. Without instruction and information supplied by their operators computers are no more intelligent than the metal and plastic of which they are made. (Graham, 1983)

3.

In this study a stratified cluster sampling design was used. The surveyed clusters consisted of existing classes. One class each of 5th, 8th, and 11th grade students were chosen by school principals in Adair County Schools, Campbellsville City Schools, Green County Schools, and Taylor County Schools. These principals were asked to take a "typical" non-computer class not meeting at the same time as a computer class. They were asked to choose a class as nearly representing a balanced cross section of students in the given grade and school as possible. There were a total of 136 males and 159 females in the sample. The number of responses by grade and county was:

Adair County:	5th - 21	Green County:	5th - 27
	8th - 19		8th - 24
	11th - 22		11th - 24
Campbellsville:	5th - 26	Taylor County:	5th - 24
	8th - 25		8th - 32
	11th - 19		11th - 30

The instrument used in this study was designed by the researcher in three basic sections. The first section was designed to reveal attitudes about the computer and confidence in dealing with it. The second asked about availability of hardware, use time, and instruction. The last section contained questions about computer experience and perceived future need for computer skills. There were no tests made for validity and reliability. Two negatively stated questions were disregarded in the final study because it became apparent as the surveys were tallied that a good number of the children had been confused by the negative statements.

The questionaires were hand delivered to each building principal along with a cover letter describing the circumstances of the research and instructions for him in choosing a suitable class for the project. Each classroom teacher involved received a similar cover letter and written instructions for administering the survey. Actual administration was by the classroom teacher rather than by the researcher to avoid, as much as possible, any reactive responses to being part of a "special" survey. The surveys were retrieved from the principals April 21-23, 1986.

After collecting the data it was hand tabulated by the researcher and entered into the Lotus Symphony spreadsheet program for computation of appropriate percentages and means.

5.

It was found that most children find the computer to be friendly. 100% of 5th grade girls in Campbellsville and in Taylor County viewed the computer as friendly and similarily high percentages for 5th grade boys, 92.3% and 93.8% respectively. Positive response from boys in Adair and Green Counties were notably lower at 50% and 40% respectively, while positive response from girls was only 70% and 66.7%.

For grade 8, Green County stood out for both male 71.4% and female 94.1% positive response. In grade 11 Taylor County stood out with boys being 90% and girls 80% positive response. There was also a large discrepancy of positive response between 11th grade girls 75% and boys 17.6% in Adair County. The totals in this study of 61% positive response for boys and 68.6% for girls is not quite as high as the 71% in the Vermette, Orr, Hall study (Vermette, Orr, Hall, 1986). It was found in this study that through 8th grade the figures tend to vary in relation to direct instruction except where home computer ownership was disproportionally high.

The great difference in perception between male and female Adair County 11th graders appears to be influenced by computer availability, appointed time, direct instruction, and mean use time on the school computers each week. Boys tend to view the computer as less friendly as they mature, with the percentage of positive response dropping from 69.6% in grade 5 to 58.3% in grade 8 and to 50% at grade 11. The trend could perhaps be similar for girls were it not for the disproportionally low percentage obtained from the small sampling (4 people) of Adair County 8th grade girls.

The concensus is that computers do make good teachers, (63% male; 71.1% female) with the girls being slightly more optimistic. There does not seem to be any consistent change in attitude with maturity from either boys or girls.

"Anyone can learn to use computers." "Everyone should know how to use computers." The percentage of agreement on these statements is quite similar for 5th and 8th grade students except that girls in both grades tend to believe more strongly that anyone can learn to use computers. In the 11th grade, however, both male and female, have considerably more positive attitudes to both statements indicating a possible maturational change of attitude. The percentages of positive response is quite comparable to the 73% in the Vermette, Orr, Hall study. (Vermette, Orr, Hall, 1986)

Adair County 5th grade boys showed a far more positive response to "I know a lot about computers" than most other 5th and 6th grade boys and girls. This might well be attributable to a high percentage of home computer owners in the class (54.5%). Although neither sex felt very confident about this statement, boys were more positive than girls

with a 27.4% positive response as compared with 19.4% for girls. The other striking feature was the significant decline in confidence for both sexes from 5th and 8th grade. The girls then took another dip to 11th grade while the boys' confidence rose again.

One explanation that comes to mind is the possibility that a little computer experience raises a lot of questions and doubts. While the boys apparently face and resolve these specters the girls tend to retreat and continue to lose confidence. This could be caused by a number of factors from preoccupation with earlier and more profound physical and emotional maturation to avoidance of advanced math classes prerequisite to high school computer programming classes. Or, as has been suggested by Jo Shuchat Sanders (Computing Teacher, 1985), because of loss of interest in computers due to inappropriate software and social design of computer classes for this age group.

Approximately 80% of all the children involved felt they "would enjoy the computer more if they understood it better." There were a few notable deviations to individual classes and counties with Green County 8th grade providing the lowest positive response in the 57%-59% range and Campbellsville 5th grade the highest response at a unanimous 100%. There were no major changes in attitudes overall from grade to grade for either sex. Neither was there must deviation between sexes for any given class.

Slightly over 90% of respondents support having computers in school. There was no significant difference either from grade to grade, sex to sex, or county to county. Slightly over 75% of respondents felt that computers are fair and treat everyone alike. There were no changes in attitude attributable to maturation. There was one apparent sex bias in Taylor County 11th grade, but it was largely nullified by the small sample size and large percentage of indecision. These findings would indicate that a majority of the children tend to view the computer realistically as a machine or tool totally under the control of the operator.

In dealing with the machine as a controlled agent, there is a relatively balanced perception with the exception of 8th grade Taylor County girls who apparently have difficulty with using the computer as a problem solver. Because there are indeed some types of problems the computer can handle better than humans (with proper human instruction), one would expect the 30%-40% affirmative response found in the study. More than 60%-70% affirmative would have indicated an unrealistic attitude toward the powers of the machine and a depreciation of the importance of human input.

We see virtual agreement (95%) among all students that learning to use the computer is not a waste of their time. Questions dealing with the importance for today's adults to be able to run a computer and for students to be able to use a computer before graduation from high school tend to reaffirm the attitude that children believe adult computer literacy is important. Although there is no indication of change of attitude from grade to grade, there is a small but consistent difference between the attitudes of boys and girls, with the girls feeling computer literacy slightly more important than boys.

With the above findings, an interesting quirk appears. Though approximately 85% of males thought it was important to be able to use a computer, only 66.9% felt it would affect their own future choice of job or career. Similar findings with the girls showed percentages of 91% to 98.1% for importance but only 82.6% felt it would affect future job or career choice. A possible explanation is that some are viewing the computer as a toy or as entertainment rather than a vital tool for modern living. Results from questions on home computer use would substantiate this idea, as about 50% of home computer use for both sexes and in all grades was with games, the remainder being somewhat less than 20% for schoolwork and a bit below 30% for other activities.

14.8% of males and 11.9% of females reported they "got bored" using computers. 8th graders tend to be more bored than 5th graders. While 11th grade males do not become more bored than 8th, 11th grade females tend to become less bored than their 8th grade counterparts. This might indicate that a review of software and curriculum is in order for junior high and up. This is especially true since there are significant fluctuations from class to class, boy to girl, grade to grade, and school district to school district. These random findings might indicate that a self directed computer room, restrictive of arcade type software, might be beneficial to this significant minority who apparently find nothing of interest in the present setting.

Very little discomfort was reported by children confronted with the task of using the computer, with the notable exception of Taylor County girls at all grade levels and Taylor County 8th grade boys. Campbellsville boys also appear anxious until the size of that total sample is considered—one person constitutes 14.3% of sample. Considering these findings Taylor County might want to review its program to try to isolate whatever factor or factors may be causing such computer anxieties.

In dealing with communications with computers, no maturational changes were shown. There is, however, a surprising gender variation with boys (27.4% finding the computer twice as difficult to communicate with as girls (13.2%). Though one might have expected the supposedly greater degree of logical thinking in males to predominate, it appears that the female advantage in communication skills has won the day.

The survey has 3 items dealing with gender related attitudes. They would indicate that boys feel they have more interest in computers than girls, and that girls believe they have the greater interest. As for the importance of learning about computers, 92.5% of girls denied that learning about computers was more important to boys while 15% of boys felt it was more important for them.

Approximately one-fourth of all students reported being home computer owners with approximately equal distribution to both genders in all grades. This was a somewhat greater percentage than expected. It is notable that, even though boys spend about twice as much time with home computers as girls, the distribution of use time between

games, schoolwork, and other activities is very similar. A little more than 50% of the time is used for games, nearly 20% for schoolwork, and a little less than 30% for other activities.

Dealing with computer skills showed definite maturational progression. This is marred in 5th grade males by a high percentage of home computer owners (54.5%) in Adair County and a 100% participation of 5th graders in Campbellsville in direct computer instruction. About 50% of all students can load and run programs. About 35% have copied programs from books or magazines. 28.6% of males and 21.3% of females have written a program of their own. There seems to be a slight bias in favor of the boys in all cases except Green County 8th grade (boys 14.3%, girls 17.6%) and Adair County 11th grade (boys 20%, girls 43.8%). It would be interesting to know the proportion of word processing skills being taught in higher level classes in Adair County to programming skills.

Two questions dealt with students' perception of control. Though the expected maturational increases did not appear from grade to grade and students felt equally able to work out problems, males definitely felt more confident in making the computer do what they wanted done. Table 22 shows a 64.3% affirmative response for males and 49.1% for females.

Although there are some notable exceptions, questions on computer availability and instruction time delivered a clear trend: 70% to 80% of the classrooms have computers, but only one third of the students have a regularly assigned time to use them and only one-half are being instructed in computer use. This would indicate the necessity of evaluating and upgrading the computer skills and attitudes of the teachers in order to make more effective use of the available hardware. It would also indicate a lack of appropriate software in any given setting or merely a lack of knowledge on the teacher's part in how to implement the use of the computer as a problem solving tool in the context of his/her own classroom.

Based on my findings, I have come to the following conclusions:

1. Most students have a positive attitude toward the computer.
2. Computers are available in classroom, yet only half feel they are taught to use computers, and only 35% have regular time with computers at school.
3. Older children consider computers less friendly than younger ones, yet the attitude that anyone can learn to use computers becomes more positive as children mature. There is a clear advancement in skills in Green and Taylor Counties, but in Adair County and Campbellsville 5th graders seem to have greater skills development than 8th graders. This is largely explained by computer accessibility and instruction.
4. The most notable gender difference appeared in 11th grade girls' perception of their own lack of ability to deal with computers. Girls rank the ability to use a computer as slightly more important than did boys.
5. Taylor County girls tend to feel more anxiety in dealing with computers than other children in the area surveyed.
6. Girls tend to find the computer easier to communicate with than boys, yet the boys feel considerably more confident of being able to make the computer do what they want done.
6. Girls tend to find the computer easier to communicate with than boys, yet the boys feel considerably more confident of being able to make the computer do what they want done.
7. Although children place a very high premium on adults being able to use computers, they feel much less conviction that lack of such skills would limit their own choices of jobs or careers in the future.

This study raised as many questions as it answered. It found computers in approximately 80% of classrooms yet found only 35% of students being instructed in their use, while 80% said they would enjoy computers more if they understood them better. This raises questions of: 1) student-computer ratio; 2) teacher attitude and ability; 3) appropriate software; and 4) how computers fit into the various curriculum areas. In the present study area these questions need further examination.

Studies are needed also to determine the reasons for the decline in confidence in dealing with computers from 5th and 8th grade and the further decline, for girls only, on into 11th grade, while boys recovered nearly to 5th grade confidence level. In this part of an early instruction program that has by-passed present 8th graders, leaving them among the last to receive most of their computer training in a single high school course? Are we dealing in a male realm of computer programming vs. a female realm of word processing skills?

It would be interesting to know why boys with home computers spend twice as much time with them as girls. How does use of space time affect each group? Do these same interest factors affect female participation with computers at school? Could a change in software design alleviate the problems?

It is recommended that Adair County reexamine attitudes among 11th graders, using a more gender balanced sample. If the same discrepancies in perceived needs and abilities appear, they should examine their high school program to determine the cause. Are the girls perhaps gaining confidence through word processing activities in the business curriculum that the boys find irrelevant—while the needs of the boys are not being met?

Taylor County should review its program to discern any factors that might be causing increased student anxiety in dealing with computers.

It would be well for all districts to find ways to increase individual computer use time. This could be accomplished not so much through computer classes as through activities in all classes emphasizing the computer as a tool for problem solving and organizing. It could be very beneficial to evaluate teacher attitudes and abilities and devise training programs that would allow teachers to become more familiar with the available computers and software.

The schools should attempt to make students aware of

the rapid changes in computer technology, past, present, and expected. They should emphasize the growing number of uses in today's society. It would be good if familiar professionals were invited to speak to students about the uses of computers in every field of endeavor. The message schools need to deliver is that computers have become an everyday tool in Mr. Average Citizen's work-a-day world.

Another idea to increase use time, encourage girls, and combat boredom is to open supervised self-directed computer rooms—restrictive of arcade type software. To be effective it must be open every day, allow freedom of discussion, and use a Socratic method when problems arise in which the children request aid. (Franksham, 1985). To increase female participation girls-only sessions tend to be helpful.

DEFINITIONS

Binary system:	a number system using two as its base and thus able to express all number using only the digits 0 and 1. As it is used in computers this means only the necessity for open (0) or closed (1) circuits.
Boolean logic:	True-false logic dealing with classes and propositions which can be mechanized using on-off circuit elements. It is the basis for the binary logic used in computers today.
Computer literacy:	an unresolved term with many shades of meaning. As it is used in this paper it will be defined as: the ability of an individual to effectively use the computer to accomplish his objectives.
CPU:	central processing unit.
Cyberphobia:	an excessive fear of computers. It may be accompanied by severe feelings of anxiety, hostility, and resistance.
Cyberphrenia:	addiction to computers to the extent that they totally dominate one's life.
Mainframe:	the part of a computer system containing the central processing unit.
Microcomputer:	a complete small computing system. It is similar to the minicomputer with the main difference being in its smaller size, price, and computing power.
Minicomputer:	a small mainframe computer which can be connected with several terminals.
Terminal:	a device connected to a computer for remote input or output of data; e.g. keyboard, printer et.

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METHYLATION AND CONFIRMATION OF PGE_2

Janna Tuck and Karen Wiggins

Scientific research in the last 50 years has brought many biological mysteries to light. One of the most interesting and yet baffling substances discovered in this half-century is the group of biochemicals known as prostaglandins (PG). PG's are 20-carbon cyclical organic acids derived from arachidonic acid in response to various stimuli on the cell's membrane. PG's have exhibited such a wide range of physiological and pathological activities that there is no general theory of their biological role. It is thought though that these chemicals are autoregulators of their tissue origin. They are not stored in the body but are found in most human tissues in minute quantities. They are thought to be involved in such things as inflammation reaction, heart disease, metastasis, asthma, sudden infant death syndrome, smooth muscle contractility, child birth, and gastric secretion. Research has yet to prove that bacteria produce PG's, but research performed by Gulbis demonstrates that Propionibacterium acnes may, under controlled circumstances, produce PG's (6). It is also proposed that hyaluronidase-positive bacteria will produce them. Further research must be done to varify these results and to modify the bacteria's growth for economical production of PG's.

Various methods of PG identification are used, the major one being radioimmunoassay as described by Granstrom in 1978 (5). In isolation of these reactive chemicals it is important to keep the procedures to a minimum. We speculate that by using a simple methylation method (17), effective for microgram quantities, that PG's can be identified using a gas chromatograph—mass spectrometer. It will be very useful in not only identifying PG's and other reactive chemicals in the extracts but also in quantifying them.

1.

In our project, four bacteria commonly found in the body (*Staphylococcus epidermidis, Streptococcus pyogenes, Pseudomonas aeruginosa,* and *Staphylococcus aureuas*) were randomly chosen—along with four different strains of *Propionobacterium acnes*—to determine whether they produced hyaluronidase. The Rapid Plate Method for Screening Hyaluronidase was used for this determination (18). The basic medium consisted of Brain Heart Infusion broth (BHIB) (80 ml of water, 3.7 g Brain Heart Infusion, and 1 g of Noble Agar). The media were sterilized at 121 °C for 15 minutes. While keeping the sterilized media tempered—by water bath at 50 °C—two additional solutions were prepared. (Dilution of these solutions was necessary due to their viscous nature.) The first solution consisted of 40 mg of hyaluronic acid dissolved in 10 ml of water and the second was 2 g Bovine Albumin Fraction V in 20 ml of water. To insure that these mixtures were sterile upon adding them to the BHIB, a 10 CC syringe and a Millex-Ha 0.45 mm filter unit were used. 10 ml of the Albumin Fraction V solution was added and then 10 ml of the hyaluronic acid solution. The agar was then tempered and poured to a depth of 4-5 mm. Four spot innoculations of *P. acnes* were made on each of two plates. Likewise, four innoculations, one of each of the other chosen bacteria, were made on the remaining two plates. (Identical innoculations were made in order to obtain duplicate results.) The *P. acnes* were cultured for 48 hours at 37 °C anaerobically in Gas Pak jars (BBL Microbiology Systems, Cockeysville, MD). The bacteria were cultured for 24 hours at 37 °C. At the end of the incubation period each plate was flooded with 2 M acetic acid for 10 minutes.

2.

Benzoic acid (5 mg), Palmitic acid (0.5 mg), and Arachidonic acid (0.5 mg), were used to varify the methylation technique that was used in the identification of PGE_2 (0.5 mg). A capillary tube (3 cm) was packed with Celite 545 to a depth of 2.5 cm. Two microliters of diethyl ether containing 0.5 - 5 mg of the acid(s) were applied to the column. The column sides were washed with two ml aliquots of ether from a clean syringe. Using a 1 ml bottle with a rubber septum, the column was inserted—wetted and down—through the septum until 2 cm of the capillary was in the bottle. (It is important that the column remain clear of the reacting materials below.) Ten ml of 50% aqueous solution of potassium hydroxide was added to the bottle first. Then ten ml of the second solution (1 g of N-methyl-N-nitroso-p-toluene-sulfonamide and 2 ml of 2-(2-ethoxyethoxyl) ethanol dissolved in 3 ml of redistilled ether)—known as Diazald (Aldrich Chemical Co.) was added, producing methane gas. This methane gas is the methylating agent. The bottle was tapped vigorously for two minutes to assure complete mixture of the solutions. The capillary was then removed and the methyl ester(s) was eluted by injecting 10-20 ml of ether into the end of the capillary (17). To identify the methyl ester(s), they were run across the Hewlett Packard GC—Mass Spec 5890. Total Ion Chromatographs were obtained for each fatty acid.

Methyl Benzoate was run for 25.5 minutes with a starting temperature of 125 °C and an ending temperature of 220 °C.

Methyl Palmitate was run for 14 minutes with a starting temperature of 200 °C and an ending temperature

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of 290 °C.

Methyl Arachidonate was run for 14 minutes with a starting temperature of 200 °C and an ending temperature of 290 °C.

Methyl PGE_2 was run for 15 minutes with a starting temperature of 125 °C and an ending temperature of 220 °C and also run for 15 minutes with a starting temperature of 200 °C and an ending temperature of 290 °C.

All experimental runs were ramped at 10 °C/minute with a solvent delay of 1 minute.

3.

From the Rapid Plate Method for Screening Hyaluronidase a small to medium clear zone was observed around the *S. pyogenes* colony and a large clear zone around the *S. aureus*. There were no clear zones observed around the *P. aeurigunosa* or the *S. epidermidis*. All strains of *P. acnes* tested showed a clear zone. These results confirmed the results obtained by Smith (18). Since *P. acnes* is hyaluronidase positive and is thought to produce PG's, it is suggested that other hyaluronidase positive bacteria be tested for the production of PG's.

The Total Ion Chromatographs obtained from Methyl Benzoate, Methyl Palmitate, and Methyl Arachidonate were compared to EPA/NIA mass spectral standards (20) and were found to be consistant with the literature, PGE_2, however, presented a problem because there are no mass spectral standards. We obtained 5 sets of results—none of which we could reproduce with the amount of PGE_2 available. Therefore, we assume that these very reactive compounds have a series of mass spectral profiles. From the most promising profile we calculated its mass fragments. These mass fragments do not permit conclusive identification of PGE_2. However, the fragments that were present can be attributed to PGE_2. This is not unreasonable due to the unstable nature of the PG's.

In the beginning we had some difficulties manipulating microgram quantities of the standards. But with practice this method proved efficient, rapid, and consistent for the methylation of minute quantities of organic acids. We find that fresh solutions especially Diazald (1-2 months), give more accurate results.

In conclusion, we feel that more research will prove this to be an effective method of PG identification. If PG's are to be identified with the GC-MS we recommend this technique of methylation because it is rapid and allows little time for auto-oxidation and degradation. If this method proves to be effective it will be easier to identify whether hyaluronidase positive bacteria produce PG's.

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JOHN DONNE'S ATTITUDE TOWARD LOVE

Gloria Lewis

Many of John Donne's poems are concerned with love in one form or another. Donne is, by turns, convinced that love will transport him above the dull realm of ordinary people, disillusioned and bitter when love doesn't live up to his hopes, or securely convinced that the stability of his love would sustain him. "The Sun Rising" expresses a sometimes unrealistic belief that love somehow makes him better than the average person. "Love's Alchemy" is a bitter response to his failure to achieve happiness in love. "A Valediction: Forbidding Mourning" states Donne's security in the knowledge that because he and his beloved have achieved a perfect union of both mind and body, nothing will be able to break it. These three distinct attitudes are prevalent in most of Donne's love poems, but they are stated most obviously in "The Sun Rising," "Love's Alchemy" and "A Valediction: Forbidding Mourning."

Donne's attitude toward love sometimes tends to be one of unrealistic optimism and occasional arrogance, as in "The Sun Rising." The speaker places enormous importance on himself and his beloved. From the beginning of the poem, he thinks that they are too special to have to bother with mundane reality. Even the morning sunrise is a nagging detail of everyday life. The poem begins with an irritated, sarcastic tone. Addressing the sun as a "busie old foole,"[1] he wonders why he and his lover must be bothered with such a thing. "Must to thy motions lovers seasons run?" he asks. He seems to think that the sun is presumptuous for assuming that they should conduct their affair according to when it rises and sets. As far as the speaker is concerned, the sun should go on and attend to its own piddling chores, such as reminding ordinary people like late schoolboys and court huntsmen to get up and go on with their monotonous daily routines. In Donne's opinion, there are those who have to get up in the morning for their everyday drudgery and those, like him and his lover, who are above it all. He thinks that he and she shouldn't have to pay any attention to their environment, as long as they have this magnificent affair. The "houres, dayes (and) moneths, which are the rags of time" simply don't apply to them.

Because the beams of the sun imply that the lovers' idyll is over, the speaker wants to block them out, saying "I could eclipse and cloud them with a winke, but that I would not lose her sight so long." It is as if all he had to do was shut his eyes and the sun would be gone. The only reason he doesn't do that is because he doesn't want to stop looking at his lover long enough to shut his eyes. At this point, the speaker begins reducing the entire world to himself and his love. He tells the sun to run along and check to see if the "India's of spice and Myne be where thou leftst them" and to "aske for those kings whom thou saw'st yesterday." As far as the speaker is concerned, any important thing is in his room. The significant things in the world "all here in one bed lay." He continues in this vein in the last stanza, still speaking of the two of them as the only people in the world who matter. "She is all states, and all Princes, I," he says to describe them—as usual placing the woman in the position of something to be governed, with himself as the governor. "All honor's mimique; All wealth alchimie" in comparison with their relationship. Their affair makes everything else seem phony and insignificant. He goes on to say that the sun should be glad that the world no longer consists of anything other than the two of them, since "Thine age asks ease." The sun can relax now that instead of a big world to shine on, it has only to worry about their room. Their room is the world, with the bed as the center. "Shine here to us, and thou art everywhere," he says. The sun willnow revolve around their bed.

The speaker of the poem adopts an overwhelmingly superior, not to say unrealistic tone. He first suggests that the sun disappear and go bother somebody else; failing that, it should revolve solely around him and his lover. A lot of couples probably think that they are the world's greatest lovers, that time should stand still for them, and that they should be above most of the ordinary routines that compose day-to-day life. These people probably also know, realistically, that those things won't happen. The speaker thinks that this love affair will allow him to rise above the tedium "ordinary" people have to cope with. Great lovers shouldn't have to live an ordinary life. For each, the rising of the sun seems to represent something ordinary, something that happens day in and day out. Since he and the girl with him are not ordinary lovers, their sojourn shouldn't have to end just because the sun comes up. He then changes tacks, imagining that the entire world will shrink away to encompass only the space he and his lover occupy, so the sun will revolve around them. The idea of shutting out the morning sun when you don't want something to end sounds good, but there is just no way to make this happen. Whether the speaker likes it or not, the sun will continue to rise and the earth he lives on will revolve around the sun, not vice versa. He places too much importance and significance on his relationship with this woman. No one can devote his entire being to love.

Because Donne's speakers place strong emphasis on the complete union of mind and body, they express bitter disappointment when it doesn't work out. In "Love's Alchemy" the speaker bitterly states that love is a sham, almost a joke, when it fails to fulfill his expectations.

The poem begins with the speaker saying that those who have loved longer than he has may have discovered the secret

of true love which he himself may never know. "Should I love, get, tell, till I were old," he states, "I should not finde that hidden mysterie." Love is "imposture," something false. He compares lovers with chemists looking for a magic elixir to cure every ill—both end up having to settle for less than they want. Just as a chemist looking for a magic elixir will settle for a lesser discovery, 'some odoriferous thing, or medicinall," lovers hope for "a rich and long delight, but get a winter-seeming summers night." Lovers end up with a short, cold night when they had expected something beautiful. The speaker seems to be saying that no one ever gets what he really wants when it comes to love and if he expects it, he'll only be hurt and disappointed.

The second half of the poem reveals what's really bothering the speaker. He feels that he's given up everything—his ease, his thrift, his honor—for "this vaine bubles shadow." He has lost all dignity for something very flimsy and fleeting. The poem continues "Ends love in this, that my man, can be as happy as I can; If he can endure the short scorne of a Bridegroomes play?" Instead of being elevated to some magnificent new realm, the speaker has been brought down to the level of a common man. Love doesn't play favorites; anyone can get treated badly. Likewise, love's pleasures aren't restricted to upper-class people. Even a servant, his "man," can have what he has; that is, sensual gratification. According to the speaker, that is all love really has to offer. Although some men swear "Tis not the bodies marry, but the mindes," the speaker doesn't go for it. As far as he is concerned, such a man "would sweare as justly, that he heares, in that dayes rude hoarse minstralsey, the spheares." He would say that the noisy serenade of pots and pans performed on a wedding night sounded just like the music of the spheres. If the speaker sounded bitter before, however, he really cuts to the bone in the last two lines. His parting shot is "Hope not for minde in women; at their best, sweetness and wit they are, but, Mummy, possest." It sounds as though he feels there's no point in hoping for anything good out of a woman. Even when they're at their sweetest and most wonderful, they're really hollow and dead and possessed by evil.

Disappointment and disillusionment with love come through in every line of "Love's Alchemy." The speaker comes across as someone who expected a great deal from love, tried it, and ended up throwing everything away on something that wasn't worth it in the first place. Love is presented as a mockery, something that has built him up just to bring him down. He sums up his feelings about the falseness of love by saying "Oh, 'tis imposture all." Throughout, the speaker cynically compares what he had expected from love and what he actually got. He conjures bleak images of love, at one pointed calling it a "vaine Bubles shadow." Looking back on a wedding day, he recalls it almost like a nightmare. He realizes that instead of a joyous event it is merely "the short scorne of a Bridegroomes play." When he sarcastically discusses "that loving wretch" who "would sweare . . . that he heares, in that dayes rude hoarse minstralsey, the spheares," he could be implying that he thought the same thing. He had expected perfect harmony, like the planets moving in concentric spheres, but instead wound up with a "rude hoarse minstralsey." Marriage turns out to be nothing more than a chaotic diversion. Women, too, end up shattering the speaker's illusions. He had high hopes for them but has decided that there was no point in hoping for anything in them; they are "Mummy possest." A woman was supposed to fulfill the speaker's expectation of someone with whom to fuse both body and soul. Because this union proved impossible, he feels, for the time being anyway, that all women are empty, evil beings. "Love's Alchemy" marks a low point in Donne's feelings about love.

In contrast to Donne's romantic idealism in "The Sun Rising" and his spiteful diatribe in "Love's Alchemy," "A Valediction: Forbidding Mourning" has a gentle, serious tone. Supposedly written to Donne's wife before he left on a trip, the poem is a reassurance that the strength of their love will sustain them during a separation. Donne demonstrates that although they will not physically be together, their souls are joined so that they won't really be apart. The physical aspect won't matter because they will still be together in mind and spirit.

As the poem opens, Donne likens his leaving to that of a dying man. "Virtuous men passe mildly'way, and whisper to their soules, to goe," instead of going out kicking and screaming. He wants himself and his wife to behave the same way when he leaves, saying "So let us melt, and make no noise, no teare-floods, nor sigh-tempests move." It would make their love seem less sacred if they carried on childishly for everyone to see. He then compares their parting and the parting of ordinary lovers with earthquakes on the one hand and trepidation of the spheres on the other. Earthquakes are local and noisy, bringing "harmes and feares." Likewise, when ordinary lovers separate, they also suffer harms and fears. Trepidation of the spheres, on the other hand, "Though greater farre, is innocent." Trepidation, which is a tremulous agitation, is vast and silent. While it also represents something of an upheaval, it is not destructive. Donne's separation from his wife is more serious than that of a mediocre couple, but won't tear them apart because of their strength. Donne de-emphasizes the importance of being together physically, noting that the need for proximity is the mark of "dull sublunary lovers love." Ordinary lovers "cannot admit absence, because it doth remove those things which elemented it." Their love consists of nothing but physical togetherness, so when they separate, there's nothing left for them. Donne's love, however, is special enough to withstand separation, since it involves a meeting of the minds rather than just physical attachment. His and his wife's love is so pure that it doesn't matter whether they are together or not; they are "inter-assured of the mind," and therefore "care lesse, eyes, lips, and hands to misse." They don't need to see each other to keep going.

Donne continues his reassurance that because their souls are joined there's no way they'll ever really be separated. He says that their souls "endure not yet a breach, but an expansion, like gold to ayery thinnesse beate." Although they are far apart, it only means that there is an expansion

of their love, rather than a gap between them. He then sets up a simile, saying that even if their souls are two, they are like the feet of a compass, with her as the fixed foot at the center and him as the foot that moves. He tells her: "Thy soule the fixt foot, makes no show to move, but doth, if the'other doe." No matter how far the other foot moves away, the fixed foot leans after it until it moves back. Donne ends the poem with the compass idea, imagining his wife to be the stable, steady one, the fixed foot, and himself to be the one who wanders. But even so, they are still joined, and just like a compass, he tells her, "Thy firmness drawes my circle just, and makes me end where I begunne."

This poem stands in sharp contrast with both "The Sun Rising" and "Love's Alchemy." Donne sounds neither frivolous and conceited nor bitter and angry. Instead, he sounds mature and even sensitive. He stresses stability and permanence, even under a trying circumstance like a long separation. Rather than become angry about the impending separation, Donne assures his wife that it doesn't change anything about them; rather, it can only make them stronger. At no point in the poem does he sound sarcastic or bitter. The language is calm and serene. Donne uses a lot of comparisons to reinforce his assurance. A man dying quietly and the trepidation of the spheres both produce images of very significant events that occur peacefully, without fear or damage, which is how his leaving his wife should occur. Their love for each other is compared to gold beaten thin—expanded, but not broken. The compass implies one who wanders but keeps a center of stability, forming a perfect circle that ends where it began.

All quotations from the poems of John Donne are taken from Barbara K. Lewalski and Andrew J. Sabol (editors), *Major Poets of the Earlier Seventeenth Century* (Indianapolis and New York: The Bobbs-Merrill Company, 1973), pp. 24, 47, 56.

INTERNATIONAL TELECOMMUNICATIONS TRADE WITH JAPAN

Linda Johnson

The international telecommunications and information services market is a viable marketplace with a $400 billion price tag attached.[1] Because of recent legislation enacted by the United States Congress and by the Japanese Diet, this previously government controlled industry is quickly becoming privatized and is astronomically expanding. It is expected to double by 1990. No longer do AT&T (American Telephone and Telegraph) and NTT (Nippon Telegraph and Telephone) hold the majority of the total market shares in the telecommunications industry. What is alarming about this newly created marketplace is the discrepancy in the trade balance internationally.

While the United States and the Japanese deregulated these respective industries at about the same time, they did not make synonymous policy regarding international trade practices. Protectionist policies by the Japanese Diet have resulted in a closed trading place in Japan where the market is worth 450 billion yen.[2]

The intention of the United States government was to "get out of the telecommunications business" by deregulating AT&T. However, now the government finds itself in a position whereby it needs to promote fair trade internationally through legislation.

A review of the literature reveals that, in order for American telecommunication equipment manufacturers to survive, they must be permitted to compete internationally. Currently, 40% of IBM's revenue is generated outside of the U.S. market. Specifically, in Japan this will be difficult because while Prime Minister Nakasone of Japan has promised a relaxation of controls on trade, the Japanese Diet holds the power to change policy. The Diet's past legislation has not indicated a tendency toward an open market attitude.

1.

The divestiture of American Telephone and Telegraph (AT&T) on January 1, 1984, sent shock waves throughout the entire telecommunications industry. Internationally, the divestiture promised a larger share of the marketplace for international telecommunications and information services. At the time of its demise, AT&T was by far the largest company in the world. AT&T assets were $150 billion. Their total assets were larger than those of GM, Ford, IBM, Xerox and Coca-Cola combined. Not only did this divestiture open up the marketplace for U.S. equipment manufacturers and information service companies, but it also allowed foreign companies to enter the U.S. marketplace.

When AT&T was split apart, it kept its Communication and Technologies Groups. The previously owned 22 operating companies were divided into seven different companies. It lost over three-fourths of its assets. Primarily, it was left with long distance services (AT&T Communications) and AT&T Technologies which is comprised of networks, information services, laboratories, technologies, consumer products and international services.[3]

Foreign manufacturers already had a foothold in the information services area with computer and semiconductor equipment already being marketed in the United States. An influx of foreign telephones hit the market almost immediately. Most foreign companies were able to move rather rapidly because they had already been manufacturing and marketing their equipment domestically. Northern Telecom, a Canadian company; Siemens, from West Germany; and the Japanese companies NEC and Hitachi, entered the American market with little development cost. However, smaller or newly formed American companies paid high prices to gain the technology and resources needed to begin marketing their products. As a result, a shakeout is expected within American manufacturers. Those companies that are able to develop their own networks are expected to be successful.

The Japanese were big winners in America, providing telephone sets to the American public at a low cost. Since the initial deregulation, the American attitude has changed from the desire for low prices to the expectation that a telephone should "last a lifetime." As a result, higher priced equipment with longer warranties and higher quality are bought by the American public.

2.

At this time, on the other side of the Pacific, the Japanese Diet was taking steps to break up what was (after the AT&T divestiture) the largest phone company in the world, Nippon Telegraph and Telephone (NTT). The previously government run NTT became a private company on April 1, 1985. Immediately global marketeers assumed a correlation between the two net marketplaces. Although NTT procurement is only 40% of the total market in Japan, being a supplier to NTT can in itself break down many of the trade barriers.

American as well as foreign companies rushed to orient their staffs in Japanese trade policies. With a Japanese marketplace in telecommunications of $450 billion yen, the horizons looked promising for many companies. However, the Japanese market was not as easy to enter. Not only was there the major problem of the language barrier, but all equipment had to meet NTT type-approval inspection.[4]

The language barrier has caused many U.S. companies to lose out because they do not have representatives in Japan that can lobby effectively for American telecommunications

equipment manufacturers. Conversely, Japan has hundreds of representatives in the U.S. that lobby extensively for the Japanese interests. Initially, the Japanese Diet proposed legislation to let a supposedly impartial group of Japanese equipment manufacturers decide whether or not a foreign manufacturer could enter their marketplace. Of course, proposals such as this and other protectionist policies would hinder free trade practices and severely restrict U.S. companies in fields in which it is most competitive: computer software, telecommunications equipment, and communications satellites.

Japan is involved in a juggling act with most nations. It has a trade surplus with almost all the world's major economies. Many of the means by which Japan practices protectionism are subtle and hard to pinpoint. Some are very easy. For example, in the car industry, all Japanese cars shipped to the U.S. must be shipped on Japanese-owned vessels.[5]

One reason the President hasn't moved to enact policy limiting Japanese imports is that the Japanese are seen first as an ally in a very strategic location in the Pacific Basin and then, secondly, as a trading partner. It is then interesting to note that the Secretary of Defense, Casper Weinberger, and the Secretary of State, George Shultz, are Japan's only mentors on Capitol Hill regarding the true issue.

Of course, these policies did not just affect U.S. manufacturers. Canada's Northern Telecom found it much harder to get its switching equipment into NTT than it did into AT&T. Just recently Northern Telecom and NTT reached agreements regarding the Northern Telecom switch. This switching equipment will be the first big order for foreign hardware to go into NTT's system.

One solution for American companies has been to merge with Japanese manufacturers so that they can gain part of the market. Specifically, it has been important for computer and information services manufacturers to merge with companies having expertise in the field of telecommunications because these two marketplaces are rapidly converging technologies together. Even IBM has followed this course of action by buying Rolm, a manufacturer of PBX equipment (Private Branch Exchanges).

3.

The importance of these two markets lies in the following considerations. World economies have been shifting from industry to information economies. Telecommunications acts as a link between nations. Presently at the top of the list with multinational corporations when making a corporate location decision is cost and ease of access to advanced telecommunications networks. The focus of international trade has also changed during the last decade. It has shifted from the Atlantic to the Pacific Basin. In order for sound economic development, a modern telecommunications systems is necessary, and that objective has been, to a great extent, achieved in the Pacific Basin where just 20 years ago almost no international communications existed. It is in everyone's best interest to provide the best technology available to compete internationally.

The United States had intended to set a precedent whereby a long established government monopoly was replaced by a free market—a marketplace where American companies would lead the way in technology. Instead, it appears that a "telecom trade war" is brewing in Washington. This trade war is a result of the discrepancy in the trade balance between Japan and the United States.

One consideration on Japan's behalf regarding the telecommunications industry is that, when AT&T was broken-up, the telecommunication market in the U.S. did not become competitive overnight. It is unrealistic to expect an industry of this nature, which has served as a public utility monopoly for decades, to do an about-face. This change did not occur quickly in the U.S. nor will it most probably occur rapidly in Japan.

Probably the most outstanding reason this is occurring is that Prime Minister Nakasone has been unable to "make good" on his promises of trade barrier relaxation. A thorough research of the press reports and the literature quoting Nakasone sends a heralding message that the trade imbalance will be rectified. But as of yet no serious actions have been taken. Quite frankly, the U.S. Congress is to the point where they no longer believe what the Japanese say and are ready to back up their threats of legislative retaliation with swift action.

Of course, the Congress can retaliate by encouraging the President to increase tariffs and impose quotas on Japanese imports. One proposal was introduced to ban all Japanese telecommunications and electronic equipment. Japan's reaction to the U.S. proposals has been to send one after the other diplomatic envoy to explain how it is trying to open its markets.

The American policymakers waited patiently for new regulations from the Japanese Diet regarding telecommunications trade. These policies were to be unveiled in April of 1985 with privitization of NTT. But the changes were disappointing in that once again only rhetoric, not practical policy, was unveiled. The Japanese government is steeped in bureaucratic processes and a lot of "red tape."

Although the Japanese government seems to be "dragging its feet" when it comes to international trade, Japanese companies have been somewhat more progressive. Many of these companies are exploring possibilities with international business. Managing Director of the Industrial Bank of Japan Tatsuo Yoshida states: "Human relations must be preeminent in dealings with Japanese business; like it or not, you must play by the local rules of Japan."[6]

The local rules of Japan are definitely different than those of American companies. Whereas American companies are accustomed to a "top-down" style of management whereby the decision making is forced down from the pyramid of the organizational structure; the Japanese corporate structure is quite different. The Japanese call their style of management "bottom-to-top," meaning lower levels of management are intimately involved in many levels of decision-making.

American legislators are getting into the act and pressuring the President to take action. A leading influence on the trade

issue with Japan is Senator John C. Danforth. Legislation that he proposed mandating "increased tariffs or quotas be imposed within seven months on imports from any country that restricts U.S. sales of telecommunications equipment" passed in April of 1985.[7]

Although the American marketplace has opened its door to free trade, not all countries have taken the same action. Specifically, Japan has pursued policies whereby the U.S. and foreign manufacturers would be discriminated against. The U.S. has promised legislative measures to "head off" this rising tide of protectionism.

"Protectionist policies exclude foreign manufacturers from the marketplace. They inhibit innovation, restrict consumer choice and ultimately lead to retaliation by those countries whose participation in this exciting industry is restricted."[8] This type of behavior results in higher costs and less availability for consumers. In the end no one wins.

The retaliation taken by countries in response to protectionism can also be viewed as protectionist. Thus a vicious cycle begins and there are no winners in the end. An aid to the change of this cycle would be the education of the public within both Japan and the U.S. Understanding each other's policies and the motivation behind these policies would go a long way in establishing better trade feelings between the two countries. Unless foreign companies are willing to invest the time to "bridge the communication gap" between the Japanese staffs and their companies, they will not be successful in promoting their businesses within Japan. It is a serious problem with serious implications for the telecommunications industry and must be dealt with accordingly.

NOTES

[1]Olmer, Lionel H. (Undersecretary for International Trade, U.S. Department of Commerce). "Historic Shift of the Economic Center of World Telecommunications." *Vital Speeches of the Day,* February 1, 1984, pp. 253-6.

[2]"Japan's NTT Seeks American Products." *Nation's Business,* January, 1984, pp. 44-46.

[3]Baida, Peter. "Breaking the Connection." *American Heritage,* June-July, 1985, pp. 65-80.

[4]Phalon, Richard. "Letting Go." *Forbes,* March 11, 1985, p. 38.

[5]France, Boyd, et al. "Collision Course, Can U.S. Avert A Trade War With Japan." *Business Week,* April 8, 1985, p. 54.

[6]Eason, Henry. "In Japan, Make Haste Slowly." *Nation's Business,* May, 1986, p. 48.

[7]Gover, Ronald. "Protectionism's Unlikely Point Man." *Business Week,* April 29, 1985, pp. 27-8.

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PRECIPITATION PATTERNS IN BOWLING GREEN, KENTUCKY, 1980-85

Greg Sharpe

We often hear weather reports which give one a particular precipitation value for a city or region in Kentucky. But how representative is this value? Can one rain gage accurately report the amount of precipitation for a city or a region? In a study of meteorology, we learn that heavy precipitation from Cumulonimbus (thunderstorm) clouds or light precipitation from Nimbostratus (light shower) clouds appears in a formation called the rain shaft (Lutgens and Tarbuck, 1986). Though the rain shaft will move with the trajectory of the storm, it does have a specific area and an outer perimeter. That is, rainfall has a place where it begins and a place where it ends. In addition, within its perimeter the rain shaft will vary in its intensity.

The purpose of this study is to examine precipitation records for the rain gages within the Bowling Green area. The hypothesis of this paper is that despite the relatively small area of the city of Bowling Green, this city will yield a variety of precipitation patterns resulting from a variety of data values.

Though Bowling Green is a relative small city (approximately 16 square miles or 41 square kilometers), it is fortunate enough to have 4 rain gages which record reliable data within or near the city limits. The 4 rain gages are located at:

1. College Heights Weather Station (CHS) on the Western Kentucky University Campus.
2. Federal Aviation Administration Station (FAA) at the Bowling Green/Warren County Airport.
3. Bowling Green Municiple Utilities, Water Treatment Plant (WTP) on Chestnut Avenue adjacent to the Barren River.
4. Kentucky State Police Post (SPP) near the Nashville Road/Green River Parkway interchange.

These station locations are designed on the Isohyet Map Series (Figures 1 through 4).

The numerical data for this paper was obtained from files at Western Kentucky University's College Heights Weather Station and the Kentucky Climate Center (NOAA, 1980

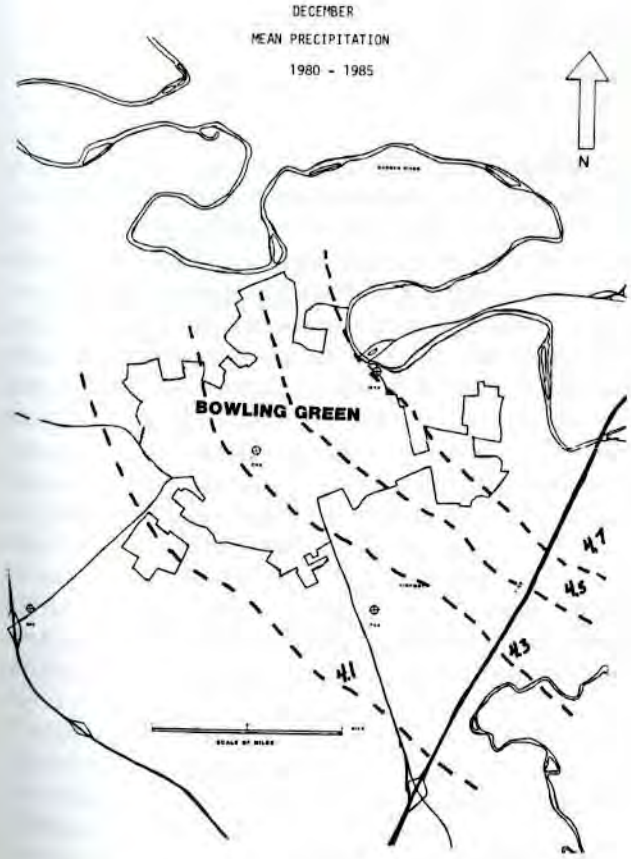

FIGURE 1

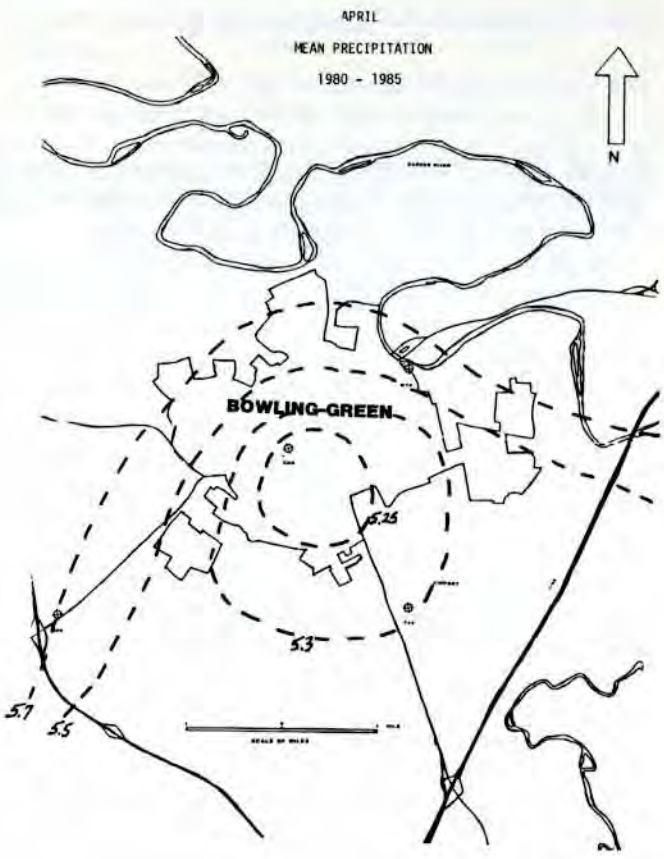

FIGURE 2

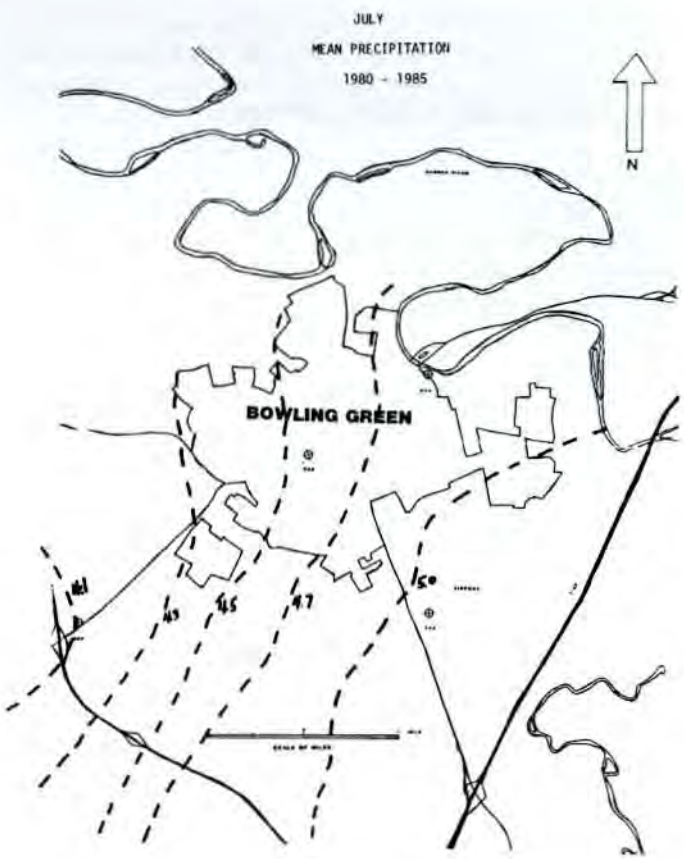

FIGURE 3

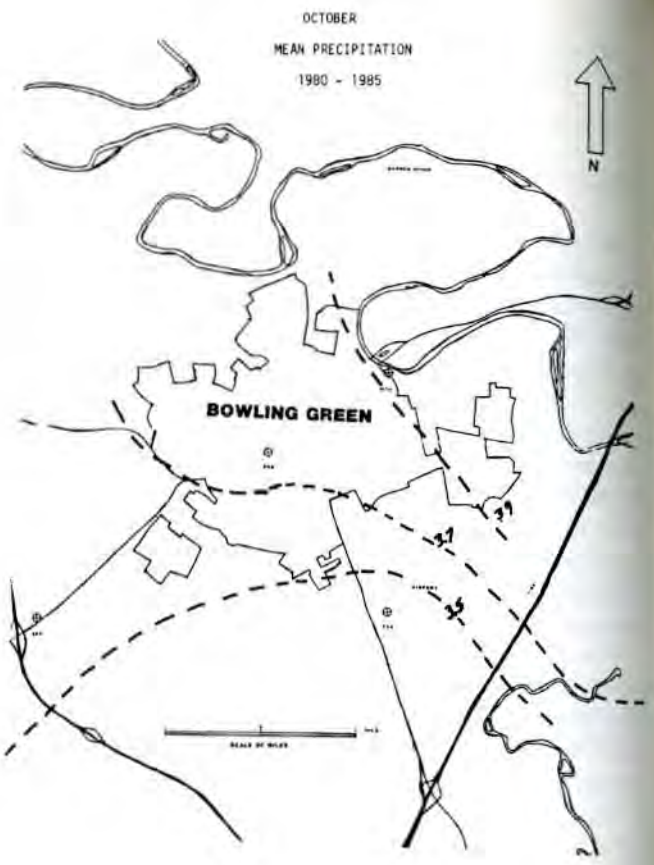

FIGURE 4

through 1985). Information on exact locations, time of observations, and types of rain gages were obtained through interviews and field observations at station sites.

The data records were used to extract the monthly totals for each month from 1980 through 1985. These totals for each month were then averaged to obtain a mean monthly value for January, February, March . . . etc. These data are displayed in Table 1. In addition, annual totals were averaged together and appear in the bottom row of Table 1. A precipitation range (i.e. highest station value minus the lowest station value) for each month was calculated and included as the last column of Table 1. Table 2 shows these some data as they appear in a seasonal distribution

The next step was to create a series of Isohyet (lines of equal precipitation values) maps for each month (selected months appear in Figures 1 through 4) and a mean annual total precipitation isohyet Map. These figures and tables were utilized to determine if I were to reject or accept the original hypothesis.

It was found that the location of each of the 4 reporting stations were in close proximity to examine Bowling Green's precipitation patterns over a long period of time. The two reporting stations that are the closest together are also located very close to the downtown area (Figures 1-4). These stations are the College Heights Weather Station (CHS) and the Bowling Green Municiple Utilities, Water Treatment Plant (WTP). These two sites were designated as urban stations. The stations are about one and a half miles apart with CHS being very close to the center of Bowling Green and WTP being northeast of CHS on a bend in the Barren River. The other two reporting stations are the Kentucky State Police Post (SPP) and the Federal Aviation Administration Station (FAA). The SPP is located about 3 miles southwest of downtown and the FAA's location is about 2 miles southeast of downtown Bowling Green. These sites were designated as suburban stations. SPP and FAA are located 3.7 miles from each other oriented in an east-west direction.

After examining the 1980-1985 mean precipitation data at each of the four locations in Bowling Green, it became apparent that for every month each location showed at least a slightly different precipitation value (Table 1). Figures 1 through 4 show Isohyet line patterns of mean total precipitation for selected months. It is obvious that the patterns can appear quite different from month to month. The other 8 maps were also unable to hold the same pattern from one month to the next. Table 1 also shows the total rainfall for the five year period across the bottom with the monthly range in the right column. Here too wide variations between the stations are apparent.

Table 1 indicates no strong set pattern in precipitation

TABLE 1

MEAN MONTHLY PRECIPITATION TOTALS FOR BOWLING GREEN, KENTUCKY - 1980-1985

MONTH	SPP	FAA	CHS	WTP	RANGE
JAN	2.80	2.36	2.68	2.82	0.46
FEB	3.53	3.70	2.92	3.46	0.78
MAR	3.50	3.94	3.70	4.17	0.67
APR	5.70	5.27	5.02	5.55	0.68
MAY	7.07	7.44	7.24	7.27	0.37
JUNE	3.45	3.70	3.83	3.66	0.38
JULY	4.10	5.07	4.56	4.85	0.97
AUG	4.44	4.01	3.86	4.85	0.99
SEPT	3.43	2.75	3.58	3.14	0.83
OCT	3.59	3.23	3.75	3.98	0.75
NOV	5.01	4.70	4.54	4.76	0.47
DEC	3.87	4.19	4.36	4.72	0.85
TOTAL	50.49	49.73	50.04	53.27	

TABLE 2

MEAN SEASONAL PRECIPITATION DATA FOR BOWLING GREEN, KENTUCKY - 1980-85

	SPP	FAA	CHS	WTP
WINTER				
December	3.87	4.19	4.36	4.72
January	2.80	2.36	2.68	2.82
February	3.53	3.94	3.70	4.17
TOTAL	10.20	10.49	10.74	11.71
SPRING				
March	3.50	3.94	3.70	4.17
April	5.70	5.27	5.02	5.55
May	7.07	7.44	7.24	7.27
TOTAL	16.27	16.65	15.96	16.99
SUMMER				
June	3.45	3.70	3.83	3.66
July	4.10	5.07	4.56	4.85
August	4.44	4.01	3.86	4.85
TOTAL	11.99	12.78	12.25	13.09
FALL				
September	3.44	2.75	3.58	3.14
October	3.59	4.70	4.54	4.76
November	5.01	4.19	4.36	4.72
TOTAL	12.04	11.64	12.48	12.62

throughout the 4 stations, with the highest range being 0.99 in August and the smallest 0.37 in May. When added together the urban stations (WTP and CHS) received 3.09 inches greater rainfall than (SPP-FAA) suburban stations. The most noticeable findings were in Table 2 with the seasonal distribution of precipitation. This is where it became apparent that one location (WTP) dominated all other locations in several ways. Over the period 1980-85 the (WTP) site was the all-around wettest with 53.26" total inches of precipitation. This total is 3.53" higher than the lowest station which was the (FAA) site that recorded 49.73" of precipitation over the same period. The second greatest total is the suburban site (SSP) with 50.49" and the (CHS) site came in third with 50.04". The (WTP) location also produced the highest precipitation totals for every season Table 2. With the greatest difference 1.51" winter, and the smallest 0.58" in fall. With 2.54" of this difference occuring in the winter and spring. The urban stations (WTP and CHS) picked up 3.08" more precipitation during the period than the suburban (SPP and FAA) stations. The (WTP) site totalled 2.77" more precipitation than any other location, and also had the highest number of months [6 out of 12] with a higher precipitation total. Analysis of the data clearly proves the hypothesis that Bowling Green cannot be represented by only one precipitation value.

There are two main reasons why the hypothesis of this paper may be erroneously accepted. A variation among readings from rain gages in close proximity is usually caused when the stations use different types of rain gages. A field check of the stations found that all the gages were of the same type (i.e. the National Weather Service approved 8" diameter metal rain gage) (National Weather Service, 1982). Therefore this first explanation is not valid in the Bowling Green case.

A second cause for the variations of precipitation data in close proximity may be the time of data observation. In the Bowling Green area it was found that three of the four stations record precipitation data early in the morning (6:00 to 7:00 a.m.). The only exception being the FAA station which records precipitation data at midnight. This could be a serious discrepancy if one were to try to map daily precipitation events. However, to circumvent this inconsistancy, only monthly total precipitation data were used. As such, as differences due to the time of observation (noticeable in daily totals) would disappear in monthly totals. Moreover, the FAA station never appeared as the out-of-place station. The FAA station was never consistently the highest or the lowest station, but remained within the range of the other stations.

Variations between urban and suburban stations might be explained by meteorological rationale. Urban areas are generally warmer than their surroundings. The concept of the "urban heat island" has been well recognized for decades (Lowry, 1967). Urban heat may promote updrafts of air and thus intensify rainfall over cities. In addition, urban air mixed with urban pollution may add a greater concentration of condensation nuclei (microscopic particulates necessary for the production of rain droplets). Therefore it is quite possible that the urban stations can yield slightly higher precipitation totals than suburban stations.

For whatever reason, the data clearly show that there can be quite a variation of precipitation values within a relatively

small area. Essentially no region or even city can truly be represented by only one precipitation value. In the future, weather forecasters might consider using a range of station values or a multi-station average to more accurately report precipitation amounts for an area.

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RELIGION AND THE MEDIA: ALLIANCE OR WAR?

Sandy Smith

Because religion plays such an important part in our daily lives, the news media often find themselves covering a variety of "religious" issues—cults, prayer in schools, the Islamic Jihad. But because the issues are often misunderstood by the media they are rarely covered well.

1.

One example is the coverage of what the media called "cults" in the late 1970s. A "cult" is nothing more than a religion outside the mainstream, but the media's use of the term has made it pejorative. During this time period, "cults" became a major source of public interest—obviously because of the Guyana tragedy in which more than 900 members of the People's Temple committed suicide. And because the public wanted to read about "cults," the media were forced to find stories. The results were headlines that screamed: "'Cult' Compared to Nazi Youth Organization," "Escapee Says 'Cult' Wants 1984 World," "He Was a Walking Zombie" and others. (Bromley and Shupe, p. 60)

There was simply not enough credible information on these different religions, and the media were duped by "experts" who wanted to advance causes. "Ex-cult" members piously reported how they lost their psychological innocence at the hands of power-mad gurus; deprogrammers have inflated themselves to the level of heroes; and others have capitalized on general concern about the dangers and abuses possible in new religions, producing sensational exposes." (Bromley and Shupe, pp. xi) What resulted were several attempts at legislation to prevent or restrict these new religious groups.

The religious group that is the most misunderstood in this decade would have to be the fundamentalist, a term the media uses to include any group that expresses a viewpoint different from that of mainline America. With the current turmoil in the Middle East, the Shi'ite Muslim fundamentalist has been blamed for randomly attacking the Israeli invaders in Lebanon; hijacking a TWA airliner in July, 1985, and holding hostages; continuing to hold six Western hostages at unknown locations in the Middle East; and clashing with Lebanese troops, (*Christian Century,* Jan. 1, 1986, p. 3).

Fundamentalists are seen as intolerant, and because the Shi'ite views don't always agree with Western ideas, all Shi'ites have been labeled as fundamentalists; and in turn, all Middle Easterners are seen as religious extremists. One need look no further than photographs taken in the Middle East to see how American stereotype Muslims. In the majority of photos, someone with a turban on his head is holding an automatic weapon and is standing in the midst of mass devastation.

Because of these photos, and the media's linkage of all Shi'ite Muslums with these people, all Shi'ites are seen as religious fanatics, not as people who are struggling for political ideas as well. In America the Christian fundamentalists are linked to their Islamic counterparts. They are not often directly indicted by the news media, but they are slurred by the entertainment media.

Fundamentalists such as Donald Wildmon and Timothy LeHaye blame a secular humanist media, by which they mean people who do not recognize God as an active force in the world and who recognize man as the ultimate being, for the change in portrayal of Christians on television. "During the past fifty years or so . . . our communications system has been taken over by men and women who for the most part do not share our (fundamentalists') traditional moral values. It has been seized by people who are much more godless, immoral or amoral in their outlook than are the American people as a whole." (LaHaye, p. 9).

These ministers cite examples of negative stereotypes of fundamentalist Christians on such shows as "M*A*S*H," "Hotel," and a variety of made-for-television movies. In "M*A*S*H," Major Burns is portrayed as a Bible-quoting Christian yet is committing adultery with Major Houlihan. He is inept in the operating room, and when a patient dies, he calls it an "act of God." In an episode of "Hotel," a priest is shown having an affair with one of his parishoners. At the end of the show, the priest and his lover "reflect on their night of passion, both agree that the experience was enlightening." (Wildmon, p. 62) Wildmon and LaHaye assert that this is an attempt by the secular humanists to wipe Christianity off the face of the earth. In reality though, it appears that what Wildmon, LaHaye and other militaristic fundamentalists would like to do is to abolish all religious beliefs except their own. Secular humanists do not appear to be organizing groups to fight the fundamentalists—but the opposite is true.

In retaliation, Wildmon suggests boycotting products whose producers advertise on these shows. LaHaye takes it one step further and suggests that fundamentalist Christians unite and pass legislation to stop such hedonistic attitudes. One of the most frequent targets of Wildmon and LaHaye is Norman Lear, producer of such shows as "All in the Family," "Mary Hartman, Mary Hartman," and "Maude." Lear has founded his own organization, "People for the American Way," an organization designed to prohibit any type of restrictions on the media.

What Wildmon and LaHaye don't seem to realize is that they are only encouraging the anti-Christian stereotyping on television. Because of their militaristic anti-intellectual attitudes, they are only reinforcing the ideal that all

fundamentalists and many Christians in general would like to force their beliefs down everyone's throat. And because men like these are the only ones who are getting any attention, much of America believes that all Christians are like them. In their reaction to anti-fundamentalist stereotyping, they are only causing more of the same.

2.

In an effort to gauge the responses of several branches of religion to these issues, I interviewed three area pastors. The pastors were asked the same questions verbatim. An attempt was made to try to interview pastors who had had some dealings with the media. Two of the three pastors whose responses are included below are Southern Baptist. Because of the possibly sensitive nature of their responses and in the hope that the answers would be open, all were promised anonymity. However, they will be identified by their church affiliation and their self-categorization in one of the following classifications: liberal, moderate, or conservative. (Fundamentalist was not an option—but several who categorized themselves as conservative were quick to point out that they are not fundamentalists.)

The conservative pastor of a large Southern Baptist church in Nashville, whose church services are televised weekly, was the most generous where the media is concerned. He rated media coverage of religious issues as "fairly well." However, he added that "they by and large ignore most stories related to religion except the extremes of both sides of the spectrum."

The moderate pastor of a Southern Baptist church in Bowling Green, a man often quoted by local media and the wire services, rated the coverage as "very spotty." He added: "the national wire services have very good reporting; national tv and radio is very poor; and local media are very bad with bright spots here and there such as the *Houston Chronicle.*"

The moderate pastor of a Methodist church in Bowling Green was a bit more harsh. "The media, primarily the television and newspapers, reflect a shallow understanding of religous trends and concerns tending toward oversimplification and pigeonholing. Any religious leaders favoring religious or moral influences in public education is a 'fundamentalist,' he said.

Both of the Baptist pastors gave the media high marks in coverage of certain issues, such as the Ku Klux Klan, religious hucksters, and the Vatican. They also agreed that the media seldom see the genuineness of solid daily help offered by religion. The Bowling Green Baptist pastor added that the media lacks anâlysis of Protestant and Free churches and that non-Judeo-Christian religions are ignored. The Methodist minister felt the media "does well in catering to modern audiences who want only pre-digested information and sensationalized stories."

There are often "touchy" subjects that the media must handle, including the Southern Baptist feud. The Baptist ministers had very differing opinions of how the media is covering these types of issues. "It's easy. Touchy subjects make news. I only get calls on touchy subjects—a la abortion, alcohol, etc.," the Bowling Green minister said. The Nashville minister felt that the media indeed had a difficult time in covering sensitive issues because, "it's difficult to get church folk to open up and speak of their own shortcomings."

He also felt the entertainment media portrayed Christians in an accurate light, although "sometimes they are caricatured." But the Bowling Green ministers felt they were portrayed as rigid, hypocritical and overly moralistic. However, the local Baptist minister felt that liberals and Roman Catholics were portrayed as "intelligent, kindly, personable."

Realizing the shortcomings of the media is only half the problem, the pastors said. Religions must learn to influence the media, they agreed. But as to how to exert this influence, they had a variety of opinions. The Methodist minister said, "It's still a competitive market out there. The way to improve the media is to compete with the attention of the marketplace." The Bowling Green Baptist pastor said religions should influence the media by "leading members of the profession to be Christians and by cultivating friends within the profession." The Nashville Baptist minister felt that religion leaders must be "accessible and willing to be honest. Media folk print and shape integrity. They expose scam and sham."

3.

The media were given their chance to respond to the same questions as the religious leaders, although they were not asked to list their church affiliation. The responses of a general assignment reporter, a religion editor, and a radio station manager follow. (Interestingly enough, the radio station manager also serves as a pastor of a small Southern Baptist church and one reporter is the son of a Progressive National Baptist minister.)

The media did not attempt to rescue their "good" name. Most agreed that the media had serious faults in covering religious issues. "Reporting on religious issues is scant, except the frequet scathing attacks on conservative ministers of the Baptist persuasion," the general assignment reporter said. "It depends on the medium. I feel the secular media slants coverage of religion in their own biases. Usually Christianity is viewed from the point of view of the sit-com as only flakes believe in God. Issues are covered from the humanistic point of view," said the radio station manager. "Yes, the media has definite problems in covering religious issues. But that is what I'm hired to do. for the most part, general assignment reporters have no knowledge of religion beyond their own biases," the religion editor said.

All three felt the media did a good job in covering Baptists—especially Southern Baptists. However, they agreed that there are other Protestant denomination and mainline issues which are being overlooked. Abortion was listed as the most important topic which is being ignored by the media. As to why these issues are being overlooked, most said editors don't feel they are newsworthy. And the general assignment reporter added, "They're afraid of offending local churchgoers who would threaten to cancel

subscriptions. It's not hard to cover religious issues, you have just got to have some backbone."

The major disagreement between these pastors and the media arose when asked what influence religions exerted on the media. The pastors said that religion needed to improve in this area. The media responded by saying that the religions have obviously recognized the potential of the media and have done a "pretty good job of flexing their muscle," as the general assignment reporter stated. The radio station manager pointed out that "during the last presidential election, both President Reagan and challenger Walter Mondale were drilled on their religious convictions by the media." The religion editor cited the fact that most papers now have at least one reporter assigned to cover the "religion beat." Despite this however, media coverage of religious issues is still largely sensationalistic, and fundamentalist issues are covered, while others are virtually ignored.

4.

Reporters are ignorant of religious issues. If a reporter is religious, (which is highly unlikely) that only guarantees that his particular facet of religion will be covered with some knowledge. For example, if he is a fundamentalist Baptist, he will cover issues relating to that topic fairly well. But few of the population is fundamentalist Baptist, and this means that other religions will not be covered accurately. Even if the Christian reporter covers Christian issues accurately, he is still probably going to ignore other religions. Little improvement has been made.

But all blame cannot be placed on reporters. The religious leaders can do some things as well. They too must realize the awesome power of the media in shaping public opinion. They have evidently learned to use the media for outreach purposes. But they are ignorant of the fact that the news-media is just as persuasive as the entertainment media. They must be willing to make themselves available for comment to reporters. Often, pastors are afraid of being misquoted. While this does happen, it is not frequent—at least where good reporters are concerned. If pastors are really concerned about getting accurate coverage in the media, they must prevent the Tim LaHayes and Donald Wildmons from doing the talking. To do this, they must learn to open up. And once they feel comfortable about talking to a reporter, they should feel free to suggest story ideas or to point out sides of the issue that the reporter may have overlooked. Leaders should seek out reporters that they trust. They should also encourage reporters to cover religious issues by giving them ideas. And they should realize that reporters are not usually interested in doing a story on a church bazaar.

Finally, religious leaders must quit looking at reporters as the "great Satan." Not all journalists are "heathens," but the profession is often seen as humanistic. As one of the pastors stated, they've got to learn to make friends within that profession. The media needs good reporters to interview good spokesmen for religion.

Recently, though, the media has been tested in its fairness in covering religious issues. Two television pastors, Jim Bakker and Oral Roberts, have been in the news recently, in the wake of scandals within their churches. Bakker, head of the evangelistic "PTL Club" and PTL Network, was caught in a sex and bribery scandal and resigned. There were rumers that the flamboyant fundamentalist Jimmy Swaggart was attempting a hostile takeover of the PTL Network. Swaggart was making appearances on national television shows stating that the Bakkers were "a cancer that needed to be excised from the body of Christ." Meanwhile, Roberts, a charismatic Methodist, claimed to be held hostage by God until he raised $8 million.

The media have done a fair and accurate job in covering the Roberts and Bakker stories recently. Both stories could have been easily sensationalized, but they were not. Granted, the Roberts story was met with some cynicism—as well it should be. And Roberts has been the topic of several commentaries recently. But the news articles have been fair. The media has been as critical with this issue as they have been with any—but never before has a minister claimed to be held for ransom from God. The public needed to know the intimate details of Roberts finances.

The Bakker story has been handled well. When Bakker's wife went into a hospital for treatment of a drug dependency, the media only reported it. And with Bakker's recent scandal which caused his resignation, the media has handled it tastefully and fairly. Reporters were of course clammoring for an "exclusive" interview with the secretary with whom Bakker had had an affair. Though she was hounded by the media, it was largely her own doing. Before she identified herself as the "other woman," there had been no speculation as to her identity. And after she was identified, she made frequent appearances before the media, alternately asking to be left alone, all the while promising to tell more details.

While the media earns high marks in covering these issues, they usually fall far short. Just what can the media do to cover religions better? First, they have to realize that there is a problem. A reporter with a specialty in sports is not going to be assigned to cover the White House. So why are editors assigning reporters who have no knowledge—or interest in—religion to cover that topic? Editors must actively seek reporters with an interest in and a basic knowledge of a broad spectrum of religion to cover that topic.

Second, the media must realize that no reporter can know everything about religion. But, as with any other topic, he must know where to cultivate sources and be capable of asking intelligent questions.

Third, the media must realize that their best sources are not the flamboyant Jerry Falwells or Tim LaHayes. They will receive the most accurate information from the local pastor or representative leader who has his finger on the pulse of the community. And reporters in this area must realize that Southern Baptist pastors are not the only ones to interview. Therefore, they should know the pluralistic map and report its concerns and issues.

Finally, editors must realize that everyone has a bias where religion is concerned. They must therefore try to edit stories so that the reporter's bias is not evident. To do this, editors have to rid themselves of their own biases.

At present neither the media nor the ministry is doing a very good job of trying to understand each other. But because religion is becoming an increasing part of the daily life of the modern American, the two must learn to work together for the good of the people.

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EARLY SECRET INVOLVEMENT OF THE UNITED STATES MILITARY IN CAMBODIA

Suzanne Carol Bell

They knew where they were. No one announced it, and there were no road signs reading "You are now entering Cambodia," but they had maps; and when they stopped for the night, they were ordered to drop and stay exactly where they lay until morning. No talking, no smoking, no movement. It was obvious to these men of the United States 4th Infantry Division that they were in territory where they were not supposed to be and that it was important not to be caught there. The men understood that they were there to seek out the enemy and destroy them. They were compelled to be there not only by the orders of their superior officers but by their very desire to get at an elusive enemy who could creep out of hiding, hit them, then shrink back to the sanctuary of their camp in Cambodia to regroup, resupply, and prepare to reattack.[1]

On July 12, 1967, the men found what they had been searching for; but because of the secrecy of their mission, intelligence information on their target had been poor and enemy numbers were severely underestimated. The ambush and massacre which followed left thirty-five Americans dead, ten missing, and one known survivor, Radio Operator William Glenn Stanley. Surrounded, Stanley and his company exchanged fire with the enemy. The last man left standing, Stanley, continued to return fire until he too fell with multiple gunshot wounds to the legs, arms and neck and the back portion of his left leg blown away by mortar shrapnel. The Vietnamese converged on the fallen men, stripping the bodies of their valuables and executing any survivor with a bullet through the head. They fired a shot through Stanley's head, which had fallen across the head of a critically sounded officer next to him. Binding Stanley's hands behind his back with a piece of wire torn from a smashed radio set, and stripping him of the chain around his neck, his wallet and his field gear, they then shot him in the head and left him for dead.[2]

Later, in a hospital in Pleiku, Stanley was treated for wounds that were to cause permanent partial paralysis of his left leg, a year in the hospital, several operations, and six more months of rehabilitation in learning to walk again. While in the hospital, he was questioned by a reporter for UPI about the details of the engagement. An Army officer sat nearby and censored what Stanley said. It was at that time, and sometime later when he read the accounts of what he as the only survivor had witnessed, that Stanley fully realized the extent of the coverup of what had actually happened and where it had taken place.[3] One newspaper account had read: "Pfc. William Glenn Stanley was slightly wounded while engaged in light contact with the enemy near the Cambodian border."[4]

While this particular incident may not be typical of all incursions into Cambodia, it is certainly not an isolated example.[5] Americans conducted secret forays to recruit mercenaries from Cambodia, frequently the Khmer Krom (literally means Lowland Cambodian) who lived in the Mekong Delta.[6] These mercenaries were called Civilian Irregular Defense Groups and were under the command of Colonel Jonathan "Fred" Lad of the U.S. Special Forces. As early as May, 1967, Special Forces had been running highly classified missions into Cambodia under the code name "Daniel Boone." Without the knowledge of Congress, these teams secretly slipped across the Cambodian border in search of communist trails, bases, hospitals, and villages. They ventured up to thirty kilometers inside the border. Supposedly their primary purpose was to gather intelligence, but they were authorized to plant "sanitized self destruct antipersonnel land mines" as they went. Over a four-year period in the late 1960s, 1,835 U.S. military missions were conducted into neutral Cambodia.[7] American soldiers involved in these incursions were volunteers, and they signed a release that subjected them to a $10,000 fine and up to ten years imprisonment for disclosing any details of these missions. Deaths that occurred to these participants were reported to relatives as having happened "along the border."[8]

In 1967 and early 1968, General William Westmoreland, commander of the ground forces in Vietnam, repeatedly asked permission to attack Viet Cong sanctuaries in Cambodia, but the Pentagon informed him that President Lyndon Johnson did not approve the operation for execution at that time. Johnson decided against violating Cambodia for fear of the domestic protest it would cause and the damage it could inflict on Cambodia's fragile neutrality.[9]

Then Richard M. Nixon won the presidential election in November, 1968. On February 9, 1969, General Creighton Abrams, the new commander of U.S. forces in South Vietnam, having recently received the news that the new administration in Washington was preparing to initiate U.S. troop withdrawals, predicted a large scale enemy offensive around Saigon in the near future.[10] He had received intelligence reports that confirmed the existence of a COSVN HQ (the acronym for the Central Office for South Vietnam Headquarters, from which the North Vietnamese and Viet Cong directed their war effort in South Vietnam) in the Suai Rieng Province in southeastern Cambodia.[11] General Abrams asked the new President for the authority to conduct a concentrated B-52 air strike on this communist sanctuary in Combodia, although he was fully aware that the United States professed to respect Cambodia's neutrality, provided for in the Geneva Accords of 1954.[12]

On March 16, 1969, in a private meeting with Secretary of State William Rogers, Secretary of Defense Melvin Laird, Presidential advisor Henry Kissinger, and the Chairman of the Joint Chiefs of Staff Earle Wheeler, with the deliberate exclusion of other top officials, Nixon announced that he had decided to order the bombing of sanctuaries in Cambodia. Although aware of the fact that he would in effect be extending the war to a third country, Nixon felt the North Vietnamese were testing his new administration and that a show of force would be "something they will understand."[13] He wished to demonstrate that he was willing to take risks which the previous administration had avoided in order to signal his toughness to the communists.[14] Realizing his attitude might be hard to justify, Nixon kept this decision a secret from the public, the press, the Secretary of the Air Force Robert Seamans, and Chief of Staff of the Air Force General John Ryan; nor were the Cambodian desk officers of Abrams' intelligence section in Saigon notified of the plans.[15] In addition, none of the Congressional committees responsible for recommending appropriations that enabled Congress to perform its function of authorizing and funding war was informed that Nixon had decided to spread the bombing into Cambodia. Even U.S. Ambassador Ellsworth Bunker in Saigon was cabled that Nixon wanted a halt to all discussions of bombing the sanctuaries.[16] The President quite obviously informed only those he felt would be supportive of his plans and could be trusted to keep such plans secret.

On March 17, 1969, B-52 bombers hit the area believed to contain COSVN Headquarters. This first attack was code named "Operation Breakfast." During the following fourteen months, 3,630 B-52 raids were conducted against suspected Viet Cong sactuaries inside Cambodia. Nixon and his trusted few gave names to the major strikes. After "Breakfast" came "Lunch;" "Lunch" was followed by "Snack," "Snack" by "Dinner;" next, "Dessert;" then "Supper." All together the air attacks were called "Operation Menu."[17]

An intricate plan of coverup and falsification was employed in order to stymie anticipated dissent. Every afternoon before a Menu mission, Major Hal Knight, supervisor of the radar crews responsible for directing the navigation of the pilots for the region of Vietnam that lay between Saigon and the Cambodian border, would pick up a manila envelope from Abrams, delivered by a special courier to Bien Hoa airbase. The envelope contained an ordinary poststrike report form, but the target coordinates had already been filled in on them with the areas inside Cambodia that were to be hit. Knight was to proceed with a normal briefing of the pilots and navigators with bomb targets in Vietnam for that night's mission. Then a few trusted pilots were taken aside and privately told to expect the ground controllers to direct them to drop their bombs on a set of coordinates that would be different from those they had just received. They were not informed exactly where this would be, and their original target in Vietnam was strategically selected so that the planes would be over their Cambodian targets simply by changing the course a few kilometers. That night, with the pilots already in flight, Knight fed the new coordinates into the computers that produced the final details of the target boxes for the Cambodian diversions. The radar crew called these coordinates to the navigators when the B-52s arrived on station overhead in the darkness of the early morning hours. The pilots were ordered to make no mention of the new target or their slight change in navigation. Even the pilots' radio operators were not to be informed. Ignorant of the diversion, they would call back to base, "mission accomplished," after the bombs were dropped; and the base intelligence division, also unaware of the change, entered the original South Vietnamese coordinates on the poststrike reports. That way, even the official records showed the bombings took place in Vietnam, not Cambodia. In the morning, Knight burned the manila envelope and its contents.[18]

Examining the reasons for this secrecy and the end it served may help in understanding the chain of events. During the Johnson administration, existence of the first missions into Cambodia were kept secret because they were not approved by the President but carried on, regardless of this lack of authorization, by General Westmoreland and others. Because of the failure of "search and destroy" missions, Westmoreland used Cambodia as a scapegoat. As one observer noted, "no guerrilla war in history was ever won without sanctuaries."[19] To win in Vietnam, certain individuals in the military decided that such sanctuaries must, whatever the cost, be destroyed.

Many of those who took part in these operations were simply obeying orders; still others could not accept the concept of limited war. Being forced to fight in what some considered a hopeless situation made them willing to violate a country's neutrality to pursue the objective for which they believed they had been sent to Vietnam: to stop the enemy—to win.[20]

When Nixon came to office as president in 1969, he inherited "Johnson's war" and its problems. There were then 540,000 Americans in Vietnam; 31,000 Americans had been killed in action; and the war was causing criticism, unrest, and a deep division of opinion both at home and abroad. In a speech to the American public on November 3, 1969, Nixon assured the nation that he wanted to end the war in Vietnam; he wanted peace, but he wanted to *win* peace.[21] To refute domestic criticism, he enunciated the "Nixon Doctrine," which stated that the United States would provide the weapons, economic aid and counsel for an Asian country to withstand attack but would restrict its use of military intervention by staying politically detached. United States policy under this doctrine was to help them fight the war but not fight the war for them. This was in line with Nixon's and Defense Secretary Melvin Laird's policy of Vietnamization: to help the South Vietnamese become strong enough to defend their freedom on their own.[22] Nixon wanted to demonstrate graphically to the American people that "we are beginning to wind down the war."[23] He tried hard to create and solidify an illusion of progress toward peace, not only to quiet the domestic unrest which eroded the morale of the men committed to Vietnam but also to maintain U.S.

superiority and prestige abroad and his own political popularity. He wanted it to appear that his efforts toward peace, whether negotiated or won militarily, were getting good results. He announced in his national address that "as President, I hold the responsibility for choosing the best path to that goal and then leading the nation along it."[24]

From the start, Nixon followed the pattern set by Kennedy and Johnson of relying more on his personal White House aides and advisors than on members of his Cabinet. Unlike the Cabinet, which was made up for the most part of experienced and able political leaders, Nixon's closest staff came from apolitical backgrounds. His press secretary Ronald Ziegler had been employed by Disneyland; chief of staff H.R. Haldeman had been in advertising. Both had held positions where image was important. These aides had contempt for the professional politicans in the Cabinet and Congress. They succeeded in alienating many of them and steered the President to ignore the laws which dictate what public officials may and may not do according to the laws of the land. Despite the fact that Nixon did not have the legal right to deploy tactical air strikes over a neutral country protected under the Geneva Accords, he felt his actions were justified and worth the risk if the desired result were accomplished.[25]

Nixon also contended that complete secrecy about the bombing must continue in order to maintain the tenuous relationship between the United States and the head of the Cambodian government, Prince Norodom Sihanouk. The Cambodian leader objected to the presence of the North Vietnamese in his country but lacked the military strength to remove them.[26] According to Nixon, Sihanouk had confidentially asked the United States to retaliate against the North Vietnamese, but he could not say so publicly because of his country's official neutral status. Therefore, Nixon reasoned, as long as he bombed "secretly" he knew Sihanouk would not protest; but if the bombings became publicly known, he would be forced to take issue against them. In addition, Nixon understood that as long as the bombing was done discreetly, the communists would find it hard to protest, since they were officially denying the presence of their own troops in Cambodia.[27] Thus Nixon felt not only free but obligated to employ whatever means necessary, whether extralegal or illegal, to preserve national security.

A complete accounting of the devastating effect that U.S. military infiltration and "Operation Menu" had on Cambodia and its people still may not be realized. It is known that target area 353, "Breakfast," obliterated an area that covered twenty-five square kilometers inhabited by approximately 1,640 Cambodians, most of them peasants. Area 609, "Lunch," contained an estimated 198 Cambodian peasants. In target area 351, "Snack," 383 Cambodians died. Of these, 303 were considered peasants. Areas 352, "Dinner," and 770, "Dessert," contained 120 peasants, all killed. "Supper," strike area 704, was believed to have destroyed over 1,700 Cambodian civilians. Approximately 4,811 Cambodians lost their lives in "Operation Menu" alone.[28]

Those responsible for the decision to bomb realized that some Cambodian casualties would be sustained in the operation, but they concluded that the advantages of surprise attack in attaining their goal of destroying communist sanctuaries outweighed making an effort to warn or evacuate civilians.[29] The terrible tragedy this bombing caused is perhaps best summed up in a comment made by a Cambodian refugee who was a child during the war:

> I didn't realize what was going on. I remember a time when the country was peaceful and beautiful. We didn't live like you do in America, but we didn't want for anything and we were happy. Then came the war and nothing was ever the same again. There was no more food, my home was gone, my family was gone, even the trees were gone. I didn't understand what the fighting was about. No one did; it was enough just to try to stay alive.[30]

These incursions into Cambodia also led to the coup that overthrew Prince Sihanouk and destroyed the fragile state of peace and neutrality maintained by him since the 1950s.[31] The expansion of the war into Cambodia hindered Nixon's plan for Vietnamization on which the rate of U.S. troop withdrawal was to be based, in essence escalating the war, not de-escalating it, and causing loss of support for the war and the government that perpetuated it.

The bombings were not revealed to the public until 1973.[32] It is hard to believe that something so extensive and so devastating could be concealed for so long. Perhaps the most detrimental effect all this had, aside from the direct loss of life, was the loss of trust in the government of the United States: the realization that in our democracy neither the wishes of the majority nor the recommendations of the educated and well-informed are always sought or carried out.

Critical Essay on Sources

For the purpose of gaining information pertinent to the topic, the secret involvement of the United States military in Cambodia, this author found William Shawcross, *Sideshow: Kissinger, Nixon and the Destruction of Cambodia* (New York, 1979), to be the most valuable source. It provided great insight into the topic and developed the characters and political factors in sufficient depth to lend a good understanding of the situation. Although factual, it was written with a definite slant against Nixon and his administration.

Of almost equal importance to the research were Congressional Quarterly, *Nixon: The First Year of His Presidency* (Washington, D.C., 1970), and Eleanora W. Schoenebaum, *Political Profiles: The Nixon-Ford Years* (New York, 1979), which provided impartial, strictly factual accounts of the governmental proceedings and political decisions made concerning Cambodia during the Nixon years, including actual transcripts of speeches and public addresses.

Richard M. Nixon, *The Memoirs of Richard Nixon* (New York, 1978), was biased but still valuable for its balancing effect on the study by Shawcross.

Of value for this explanation of political treaties, doctrines, policies formulated and political atmosphere of the period prior to and during United States involvement in Southeast Asia were Allan R. Millett, *A Short History of the Vietnam War* (Bloomington, Indiana, 1978), and Milton Osborne, *Politics and Power in Cambodia: The Sihanouk Years* (Camberwell, Australia, 1973).

Peter A. Poole, *Cambodia's Quest for Survival* (New York, 1969), though brief, was nevertheless useful in identifying ethnic groups and explaining terms. Written by a man holding a Ph.D. in international relations who learned the Cambodian language well and lived for several years in that country, it was a useful and reliable source for background material.

George C. Herring, *America's Longest War: The United States and Vietnam 1950-1975* (2nd ed., New York, 1986), was a good source of general information about the Vietnam conflict. It was most useful in supporting the attitude of General Westmoreland and his ground troops in their frustrations with the incompatibility between traditional and limited war, and the enemy's tactics which, in their minds, necessitated the secret violations in Cambodia.

Ward S. Just, *To What End: Report from Vietnam* (Boston, 1968), written in story form, was of little historical value other than to relate a specific incident of the United States military in Cambodia and to reflect the soldiers' outlooks.

Invaluable for proof and verification of actual military presence of ground troops in Cambodia was the interview with Vietnam veteran William Glenn Stanley (September 12, 1986). His description added to an understanding of the feelings and personal attitudes toward the situation in Vietnam and Cambodia. The newspaper articles from the Louisville *Courier Journal,* July 20, 1967, and the Adairville *Enterprise,* July 20, 1967, confirmed and added credibility to this veteran's rendition of the event. The interview with Cambodian refugee Ye Chak, (October 10, 1967), was more important for providing the tone of emotion from the Cambodian viewpoint than for its factual content. It was useful however, to illustrate the severity of the spreading conflict on the Cambodian people.

The New York *Times,* March 26, 1969, identified the specific locations of COSVN Headquarters, but was more important as a source demonstrating the secrecy and attempts to cover up the activities of the United States in Cambodia.

NOTES

[1]Interview with W. Glenn Stanley, Vietnam veteran living in Bowling Green, Kentucky, September 12, 1986.

[2]Louisville (Kentucky) *Courier Journal,* July 20, 1967.

[3]Interview, Stanley.

[4]Adairville (Kentucky) *Enterprise,* July 20, 1967.

[5]For more examples, see Ward S. Just, *To What End: Report from Vietnam* (Boston, 1968), 166-191, and William Shawcross, *Sideshow: Kissinger, Nixon and the Destruction of Cambodia* (New York, 1979), 25.

[6]Peter A. Poole, Cambodia's Quest for Survival (New York, 1969), 9; Shawcross, *Sideshow,* 24.

[7]Shawcross, *Sideshow,* 64.

[8]*Ibid.,* 24.

[9]*Ibid.,* 92.

[10]*ibid.,* 19.

[11]New York *Times,* March 26, 1969. The information obtained about the specific province where Abrams believed there to be existence of COSVN HQ ironically came from a newspaper article. It was reported that Abrams had requested authorization for an air strike against HQ and had been informed by State Department officials that there would be no support for this action.

[12]Milton Osborne, *Politics and Power in Cambodia: The Sihanouk Years* (Camberwell, Australia, 1973), 5.

[13]Richard M. Nixon, *The Memoirs of Richard Nixon* (New York, 1978), 381.

[14]George C. Herring, *America's Longest War: The United States and Vietnam, 1950-1975* (2nd ed., New York, 1986), 225; Shawcross, *Sideshow,* 73, 134.

[15]*Times,* March 26, 1969; Shawcross, *Sideshow,* 22.

[16]Nixon, *Memoirs,* 380.

[17]Shawcross, *Sideshow,* 29.

[18]*Ibid.,* 30-31.

[19]*Ibid.,* 65; Herring, *America's Longest War,* 150, 176.

[20]Interview, Stanley.

[21]Congressional Quarterly, *Nixon: The First Year of his Presidency* (Washington, D.C., 1970), 94-A, 96-A.

[22]Allan R. Millett, ed., *A Short History of the Vietnam War* (Bloomington, Indiana, 1978), 150.

[23]Eleanora W. Schoenebaum, *Political Profiles: The Nixon-Ford Years* (New York, 1979), 468.

[24]Congressional Quarterly, *Nixon,* 97-A.

[25]Nixon, *Memoirs,* 381; Schoenebaum, *Political Profiles,* 469.

[26]Shawcross, *Sideshow,* 72, 94.

[27]*Ibid.,* 28, 93; Nixon, *Memoirs, 382.*

[28]*Shawcross, Sideshow,* 28, 29.

[29]*Ibid.,* 28, 93.

[30]Interview with Ye Chak, Cambodian refugee living in Bowling Green, Kentucky, October 10, 1986.

[31]Poole, *Cambodia's Quest,* passim.

[32]Shawcross, *Sideshow,* 28.

PARENTAL DIVORCE AND CHILDHOOD EMOTIONAL DISTURBANCES

Linda Scariot

A review of current research literature presents an ongoing search for an explanation of the association between divorce and continuing childhood emotional disturbances. A number of studies have been specifically aimed at understanding children's reactions and adjustments to both predivorce and postdivorce periods. The consensus is that children of divorce are "at risk" for psychological damage. The literature on the effects of divorce suggests that these children experience fear, loss, guilt, betrayal, anger, and depression. They are thought to be overrepresented within delinquent groups and to experience as well as exhibit more psychological disturbances than children from intact families.

Fry and Addington (1985) state that because divorce is viewed by most researchers as being a relatively discrete event, many observers make the mistake of attributing to the divorce itself all the many events that follow it. Often overlooked is the important consideration that much of the psychopathology following divorce may be independent of the event of the divorce; and it may well be that some of the problems in the emotional functioning of the family following divorce may be due to the family and parental discord that existed in the family system long before the event of the divorce. These same researchers view divorce as a complex, dynamic, social process rather than a discrete event and therefore feel it is not possible definitely to specify the "effects of divorce," since there are few straightforward "resulting" effects that can be identified as the inevitable consequences of divorce. Instead, they choose to view any of the "resulting" disturbances from an interactionary standpoint—as an interweave of the child's individual psychological competencies for dealing with stress; the predivorce nature of the family setting and support systems available to the child; the community, postdivorce environment, and available support systems for the child's family; and the cultural values, beliefs, and attitudes surrounding family life. When considered in isolation, these systems do not adequately explain the wide variations found in children's divorce adjustment. A comprehensive explanation requires consideration, both individually and conjointly, of all of the above systems.

The relations among these systems are not static, and interrelation may exist immediately following the divorce event. Since it is nearly impossible simultaneously to consider all the interactions within the scope of this analysis, primary emphasis will be placed on characteristics of the individual child and on the family as a system as the fact of intervention with brief comments made on the broader environmental factors and the effects of cultural attitudes toward divorce.

1.

Sex of the child has been found to be an important variable in regard to adjustment to divorce. It has been noted that the impact of divorce and separation was more pervasive and enduring for boys than girls, with boys being more likely to be noncompliant and aggressive.

Emery (1982) believes that marital turmoil is related to problems of undercontrol in boys (e.g. aggression, conduct disorders) and to problems of overcontrol in girls (e.g. anxiety, withdrawal). Further, he feels that there may be a sex difference in the manner and degree to which the sexes respond to marital discord and divorce. Emery suggested that boys, in the custody of their mother, may find the loss of their fathers more stressful than girls since boys need more consistent disciplinary practices as well as consistent male models. Thus the effects of turmoil and separation may have a more immediate effect on males. It is possible, however, that the effects on girls may be delayed and may appear later in adolescence in subsequent relations with the opposite sex. In fact, girls are likely to be just as troubled by marital turmoil as boys are, but they may demonstrate their feelings in a manner that is more appropriate to their sex role, namely, by becoming anxious, withdrawn, or perhaps even very well behaved.

Various arguments suggest that either older or younger children should be more affected by marital turmoil. For example, it could be argued that younger children are more susceptible because of greater dependence on their parents. On the other hand, older children are more sensitive to emotions and may feel pressure to become involved in interparental conflict, thus making themselves more vulnerable to its effects. Fry and Addington suggest that differences in effects appear to vary both qualitatively and quantitatively with the age of the child and that differences between age groups are likely to be due to specific social-cognitive developmental changes in children's ability "to appraise the divorce situation." Children's perceptions of the divorce, their thoughts and feelings about their parents' marriage, as well as their fears and worries, are contingently related to their age and ability to interpret these events realistically. Thus preschoolers are often the most vulnerable group because their level of cognitive development precludes their constructing an accurate interpretation of events surrounding them. They fear disruption of nurturance and possible abandonment by parents. School-aged children (6-12 years) characteristically struggle with conflicts regarding loyalty to both parents. Adolescents tend to have acquired the ability to be insightful and concerned yet detached. It's possible that their ability to reason from the third person's perspective facilitates their adjustment. Evidence for this

improved reasoning ability comes from studies by Kurdek, Blisk and Siesky (1981), who found positive correlations between children's divorce adjustment and age, internal locus of control and interpersonal reasoning; that is, children with an internal frame of reference were less apt to consider the divorce *per se* as a primary determinant of personal outcomes. In addition, children with a high level of interpersonal reasoning did not tend to blame themselves for the divorce, did not think parents would reunite, and also provided a positive/neutral description of both parents.

Kalter and Rembar (1981) reinforce these findings on age in their statement that it is the timing of parental separation/divorce that is associated with different kinds of vulnerabilities corresponding to the different cognitive developmental levels of the child. Wallerstein (1983) expands on this theme of age/cognition levels in her conceptualization of six interrelated coping tasks that are shaped by "the perceived threats to the psychic integrity and development which the divorce process poses to the child." These tasks are presented as hierarchical and follow a particular time sequence, beginning with the crucial events of parental separations and culminating at late adolescence. The tasks are as follows:

Task I: Acknowledging the reality of the marital rupture
Task II: Disengaging from parental conflict and distress and resuming customary pursuits
Task III: Resolution of loss
Task IV: Resolving anger and self-blame
Task V: Accepting the permanence of the divorce
Task VI: Achieving realistic hope regarding relationships

As indicated above, these tasks may span several years duration, with certain tasks being resolved only at particular age junctures, implying again that the older the child the more available the cognitive resources to adjust to the divorce.

Temperament plays a highly significant role in the child-environment interactional process. Fry and Addington (1985) cite several studies indicating that temperamentally difficult children have been found to be less adaptable to change and more vulnerable to adversity. From an interactionist's viewpoint, the prediction is that the temperamentally difficult child will be less likely to cope with the postdivorce environment and will more likely encounter emotional difficulties.

2.

A comparison of divorced and intact families indicates that divorced parents make fewer maturity demands on their children, are less consistent in their discipline, are less apt to reason with their children, communicate less, are less affectionate, and evidence less control on the part of both parents. Mothers become restrictive and give orders but do not follow through with appropriate discipline; fathers, in contrast, tend initially to be excessively permissive and indulgent (Emery, 1982).

Modeling is an etiological mechanism by which marital turmoil may affect children. Interparental conflict may interfere with imitation of the same-sex parent or may lead to rejection of both parents as models. Either direction would disrupt normal socialization in that appropriate parental behavior might not be imitated while other, more deviant models might be followed. Another modeling hypothesis states that parents in an unhappy marriage may exhibit more hostile and aggressive behavior than do happily married couples, and this behavior could be imitated by the child. Modeling explanations of the sex differences in response to marital discord suggest that boys are more likely to imitate aggressive behavior than are girls, and that children are more apt to imitate a same-sex model (i.e. husbands tend to act more aggressively in disturbed marriages, whereas wives react with more anxiety and withdrawal) (Emery, 1982).

Another mechanism by which marital turmoil may affect children is through an alteration of discipline practices. This may be a change in the use of discipline techniques or an increased inconsistency in administering discipline. Problems of conduct and aggression have been related to inconsistent discipline, which may account for the increased frequency of undercontrolled behavior in males. Children of divorce, especially boys, have been found to be less compliant with parental commands than are children from intact marriages (Emery, 1982).

Of particular interest is the trend toward a "coercive reciprocal cycle of negative parent-child interaction" in the first year following divorce. It is often the mother's lack of management skills that function to accelerate the child's aversive behavior, which in turn results in increased coercion of the mother's parenting behavior, with increased feelings of helplessness, anger, and self-doubt. An inevitable consequence of this cycle is the diminished capacity of the parent to respond to the child's needs, thus giving rise to emotional difficulties within the child as well.

Divorce also brings multiple losses, of which the most obvious is the partial or total loss of one parent from the family. Other losses of divorce may include the loss of familiar daily routine; the loss of the symbols, traditions, and continuity of the intact family; the loss of the protective physical presence of two parents who can relieve and buffer each other; loss of the family home, school and neighborhood, and often the loss of a more privileged way of life. In Wallerstein's (1983) opinion, this task of absorbing loss is perhaps the single most difficult task imposed by divorce. The child is required to come to terms with the constraints, limitations, and potentialities of the postdivorce family. At its core, this task demands that the child overcome his profound sense of rejection, humilitation, unlovability and powerlessness which the one parent's departure so often engenders.

Social acceptance of the "broken" family also plays a determining role in the adaptation of the individual to divorce. The family is the primary agent of socialization for the child. However, female-headed single parent families are often assumed to be disorganized, inefficient, or incapable. Various forms of sex discrimintion affect a female head of family, and when negative the mother's vulnerability may in turn affect the child's emotional adjustment. The

Wallerstein article, interestingly, presents divorce in very negative terms: divorce as a "marital rupture" and as the "derailment of the family crisis;" the separated family as lacking a "sense of wholeness" and lacking "constancy in human relationships;" and constant analogy of divorce to death with use of terms such as "bereavement." Such negative bias when guilt arousing to adults cannot help but be transmitted to children in perhaps as great or greater detrimental context.

As referenced earlier, both the Fry and Emery articles expound the idea that marital discord, be it predivorce or postdivorce, is the cause of a variety of behavior and adjustment problems in children. Anger between parents and conflicts over marriage and child rearing perpetrate a state of emotional disequilibrium. Children from divorced and intact homes alike, where there is interparent conflict, are at a greater risk than children from divorced or intact homes that are relatively harmonious. This is not to suggest that separation and divorce do not affect the child but rather that interparent hostility may be the principal explanation for the association between divorce and continuing childhood problems. In fact Emery suggests that "divorce may ultimately result in a less detrimental environment for a child's emotional development, at least in homes where conflict is great and where divorce will lead to a diminution of that conflict." If it is assumed that interparent conflict is the important variable in divorce, then it follows that families in which interparent conflict is high are at greater risk for the negative consequences of divorce. The home situation, as it exists prior to divorce, may be more destructive to the children than the postdivorce situation. In predivorce conflict, angry parents often use the children as pawns, scapegoats, or active combatants in their conflict with each other. In postdivorce periods, one of the most damaging things that children have to contend with is the parents' vilification of each other—their distorted criticism, their anger, their recriminations and their battle to obtain the loyalties of the child. This, in turn, can lead to feelings of anger and guilt on the part of the child. It *is* possible for divorce to bring relief to the marital discord and hostility. Often, however, the same conflicts carry over from the predivorce to the postdivorce period. In addition, different conflicts may arise, often over custody, child support, alimony, and visitation.

3.

It is unlikely that any single hypothesis fully explains the relation of marital to child problems, yet each may prove to have merit. The child's own individual personality and sociodemographic characteristics, the family climate, society's attitudes, plus numerous other factors all intermesh to influence the child's adaptability to divorce. The degree to which these factors contribute to the situation is variable, and it is perhaps impossible to assign weight or importance to any one over another.

According to Salk (1978), most children have sufficient control and the kind of psychological "safety valves" that enable them to tolerate a certain amount of stress without being overwhelmed or disorganized. At the level of prevention, though, several suggestions can be offered that would either help to minimize or alleviate some of the stress placed upon the child in the event of divorce. First, it is necessary actively to instill in the child a sense of worth, acceptance, and confidence in one's own ability to adapt and to cope. Second, efforts should be made to minimize children's involvement in interparental conflict and work toward the difficult goal of keeping their children out of their angry disagreements lest the children learn that differences are resolved by yelling, fighting, or hitting. Third, parents should attempt always to agree in front of the child about at least one important topic: discipline. Fourth, parents should make a special effort to maintain their individual relationship with each child, as this may partially buffer the child from the interparental conflict. Finally, parents need to be aware that conflicts between them can have negative effects on their children.

As a final note, Dr. Salk states that children want and need to participate to some degree in the decisions affecting their lives. If parents are sympathetic to the wishes and feelings of their children and let them participate in the decisions about their future, the children will be far less likely to experience the emotional trauma of distress, depression, defiance, guilt, and anxiety. It is the responsibility and the obligation of both parents to provide the optimal conditions for the healthy emotional and physical growth of that child until he or she is independent. That is the price for bringing a child into the world—regardless of how the parents may feel toward one another.

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CHILD SEXUAL ABUSE

Janice Daniel

The terms child sexual abuse, child sexual assault, and child molestation refer to the exploitation of a child for the sexual gratification of an adult. Such abuse should not be confused with the warm, affectionate, physical exchanges between an adult and a child which show respect for the child's feelings. Rather sexual abuse involves coercing a child to engage in sexual activity through subtle deceit.[1] Incest refers to sexual contact between nonmarried family members, such as a father and daughter or a boy and his uncle.[2] Thirty-eight percent of American females and one in ten males will be sexually molested by age 18 years. At least fifty percent of all child sexual abuse occurs in the family as incestuous abuse. Seventy-five percent of female teenage prostitutes on the street have experienced rape, incest, or molestation earlier in their lives.[3]

Ninety percent of the time the child victim of sexual abuse will know the offender, and chances are high that the offender will be a family member.[4] Sexual abuse by someone known to the child is less likely to be reported by the child and if unreported will become a chronic pattern of abuse which may last for years before being revealed. The abuse usually begins between ages three and six and if there is no intervention continues into the child's adolescence. A child who is being sexually abused by someone they know is not likely to report the abuse for several reasons: the adult is in a position of authority to the child: the child fears being blamed for doing something wrong; the abuser may offer bribes or threaten physical harm; the child may enjoy receiving this special attention even though it is uncomfortable and confusing. Too frequently a child has reported the situation to an adult who refused to believe the child. The child then concludes that adults cannot be trusted or expected to help, so the child tries to cope on his/her own.[5]

I.

Sexual abuse is, first and foremost, an act of violence, hatred, and aggression; whether it is viewed clinically or legally, objectively or subjectively, violence is the common denominator. Like other acts of violence (assault and battery, murder, nuclear war), there is a violation of and injury to victims. The injuries may be psychological or physical. In acts of sexual violence, they are usually both.[6]

Clinically, child sexual abuse is the sexual exploitation of a child who is not developmentally capable of understanding or resisting the contact, and/or who is psychologically and socially dependent on the offender. It may involve fondling, exhibitionism, masturbation, and genital penetration. The National Center for Child Abuse and Neglect also includes in the category of child sexual abuse commercial exploitation for prostitution or the use of children in the production of pornographic material.[7] Legally, child sexual abuse is described using various terms. It may be considered rape if physical force is used and penetration takes place or statutory rape if force is not used but the victim is underage and thus unable to give legal consent. Sexual abuse without penetration (touching, fondling, masturbation, etc.) usually is defined as indecent liberties.[8]

Child sexual abuse is more often coercive than assaultive. The offender—whether a stranger, someone known to the child, or a family member—takes advantage of the vulnerability of the child and coerces her/him into sexual activity. Therefore, the term abuse rather than "assault" is a more accurate designation. However, as in rape, child sexual abuse is a form of violence, for it results in both psychological and physical injury to its victim.[9]

There are two criteria which provide the parameters for understanding child sexual abuse as a form of violence and aggression. The first (as in rape) is the lack of consent on the part of the victim. However, in the case of child sexual abuse, the lack of consent is a given. Children, by definition, cannot give or withhold consent when approached sexually by an adult because they are immature, uninformed, and usually dependent on the adult. Consequently, they lack the real power to resist. Therefore, any sexual contact between an adult and a child is abusive. The second criterion for understanding child sexual abuse has to do with whose self-interest is being served by the sexual contact and who is injured. Child sexual abuse describes"contacts or interactions between a child and an adult when the child is being used for sexual stimulation of that adult or another person."[10]

If parents think that by telling their child, "Don't speak to strangers," they have helped guard the youngster against sexual abuse, they must think again. Contrary to the popular notion that sexual molestors are strangers who accost children in the street, most sexual child abuse is committed, frequently right under the parents' not-so-watchful eyes, by persons the victims know well and trust implicitly: baby-sitters, neighbors, teachers, family friends and even close family members, including fathers, stepfathers and grandfathers.[11] Making children aware of dangers that exist often presents parents with a problem: How do they warn their youngsters without making them fearful or distrustful of all adults? The key, say experts, is to talk with your child in a calm yet direct manner, using language they can understand—and to keep the lines of communication open.[12] Dr. James Comer, the Maurice Falk professor of child psychiatry at Yale University Child Study Center, says that with very young children especially, "You should tell

them that many or most of the people in the world are good people who do not harm children, but there are also "bad" or "sick" people who will harm children. Even if it's a parent or teacher or relative, they might still be capable of doing bad things."[13]

The fact that sexual abuse cases are being reported more often is encouraging to experts in the field. Deborah Daro, director of research at the National Committee for Prevention of Child Abuse, says sexual abuse reports now comprise about 14 percent of all cases addressed by child protective agencies, compared with 7 percent two years ago. "Although it's still a small percentage, it's a dramatic increase," she says. However, the taboo and secrecy surrounding sexual child abuse still exists, and most incidents are still unreported."[14]

There are several ways of protecting your children from people they may trust:

When your child tells you he or she does not want to be around a certain person, make sure you find out why.

Tell your children to always let you know where they are going and with whom. And know who your child's friends are.

Be careful when selecting preschools, day-care centers and babysitters, and check their references. Ask your children how they feel about each authority figure, and ask what type of activities they are involved in when under that person's care.

Look into the hiring practices and screening methods of schools, youth groups, camps and other such organizations. Sexual abusers often seek out jobs or activities which will put them in contact with youngsters.[15] The purpose of these preventive measure is not to scare the child, because the vast majority of adults don't abuse children. But given the times we live in, children are vulnerable. That is why we must educate them about sexual child abuse.

Children may not tell you directly, but significant changes in the child's behavior may occur which should not be ignored. For example.

a shift from outgoing behavior to shy, withdrawn behavior (or vice versa);

regressive behaviors such as resuming thumbsucking or bedwetting;

discomfort or fear of being left alone with a particular adult or teenager;

precocious, provocative sexual behavior, such as imitation of adult sex play (a child will not act out sexually unless they have been taught to do so by sexual contact with an adult);

running away or drug and alcohol abuse; nightmares or sleep disturbances.

Any of these indicators should encourage an adult to explore with the child in a nonaccusatory, sensitive way what has been happening to the child.[16]

Small children often do not have the vocabulary to explain to an adult what is going on and so will use words or images adults do not understand and may easily disregard. Disclosure of sexual abuse is often frightening and difficult for the child victim. The child may fear not being believed or being punished for lying. Strongest of all is the fear that no one will do anything to stop the abuse and the child will face retribution at the hands of the offender.[17]

In 1975 Beth Romaine's parents, Stanley and Eleanor, separated. Two years later her mother met Cornelius McLean, a laborer. McLean, age fifty-seven, proceeded to abuse Beth sexually from age eleven to age sixteen.[18] Terrorized, confused, and embarrassed, Beth told no one of her ordeal until in the middle of an argument with her stepmother in 1982, she blurted out that she had been repeatedly raped. To her surprise, she found support and justice.[19] Beth had a lot of mixed feelings. She was scared because she didn't want to hurt her mother. She was happy that she was going to get Neil away from her. But she was scared that he was going to come back and kill one of them.[20]

The trial lasted five days, and the jury deliberated for four hours. They found Neil guilty on one count of unnatural rape of a child, one of rape of a child, and one of indecent assault and battery on a child under 14. The judge sentenced him to 10 to 15 years on each count to be served concurrently.[21] Life gets easier as time goes on, but Beth still feels afraid of Neil. He will be eligible for parole in another three years. Logically Beth knows that this is unlikely, but there is something in her head that believes he going to want revenge. Every once in a while Beth makes a call to be sure he's still in prison.[22]

2.

An adult can of course be unjustly accused of child abuse. Some feel that the pendulum of enforcement has swung too far. "Child protective services, the district attorney and the police have ignored child molestation for so long that now we may be going the other way," says Paul Abramson, a UCLA psychology professor who often works with prosecutors. "They should take every accusation seriously, but they should avoid a rush to judgment." That view was echoed in December by a grand jury in Austin, Texas, that heard a string of abuse cases. In an unusual move, the 12 jurors wrote to Judge Thomas D. Blackwell, saying that while they supported vigorous prosecution of child abuse, ". . . we have observed a disturbing tendency to accuse persons too readily, without due consideration for the consequences of an illfounded or false accusation."[23]

The abusers must be brought to justice, but the concern must not turn into a "witch-hunt" which could adversly affect the lives of involved children as well as destroy the reputation of accused adults. At its most basic level, the entire issue of child sexual abuse comes to this: can children be believed? The law now assumes that children who are old enough to know the difference between right and wrong can be treated as adults.

In criminal cases the susceptibility of children to suggestion has become the first line of defense. Lawyers for accused molesters aim to put the investigation itself on trial.[24] One attorney who is not an expert at defending child molestation cases claims to have picked up pointers

from seminars sponsored by the public defender's office. "Children are insidious, practiced liars," asserts Mike Adelson, an 18-year veteran of the public defender's office in Los Angeles County. Adelson has led many of the seminars, instructing lawyers on how to frighten, cajole and confuse children on the witness stand. "You want the child to be intimidated," Adelson told a packed lecture hall during a class last year. "Be prepared to show through cross-examination that the child has a vivid imagination and can't be trusted."[25]

This is the line of defense that many defense lawyers take in their attempt to protect the accused child molester. The headlines in the Virginia McMartin case were as follows: "THE YOUNG WITNESSES IN THE McMARTIN SEX ABUSE CASE UNDERGO A LEGAL BATTERING IN COURT." For 13 emotion-charged months, in one of the longest, costliest and most grueling pretrial hearings in California history, the seven defendants confronted their accusers in court. Virginia McMartin, 77, founder of the notorious Manhattan Beach, California, preschool bearing her name, and six of her teachers, all pleading not guilty, hear a procession of 13 former pupils, some as young as 5, accuse them of shocking crimes. The children testified that they were raped, sodomized and forced to witness animal sacrifices and satanic rites.[26]

Each defendant in the trial was represented by a lawyer, and some children faced intimidating cross-examination by as many as six defense attorneys. "The kids were terrified," said Kee MacFarlane, the psychologist who first interviewed the young witnesses. "There are lots of parents and therapists who will have to deal with the results for years after the trial."[27] From one lawyer's point of view, he was just doing his job, trying to get his client off. Jessica (not her real name) visibly wilted under the attorney's barrage. She drew up her knees, lapsed into periods of silence and lisping, and began chewing the ear of the stuffed rabbit at her side. By day's end the ear was gnawed and sopping wet.[28]

Compared to her fellow witnesses, Jessica got off lightly. She was on the stand some 15 hours during a four-day period, whereas Patricia was grilled for 24 hours in eight days, and Danny spent more than 50 hours in 16 days. Davis, a defense attorey, pressed Patricia for intimate particulars of an alleged attack by Buckey. He wanted to know what it felt like and how Buckey moved his body during the act. The color vanished from the girl's countenance, and she hid her face in her hands.[29] Later, outside the courtroom, her mother comforted Patricia. "It's okay to cry, honey," she said. The girl wiped her eyes and shook her head. "Not in front of them," Patricia replied,meaning the seven teachers who were so palpably present while she was being questioned. Later Davis would ask Patricia to imagine that the microphone was a penis and to show the court how Buckey allegedly touched a boy.[30]

The parents complained that their children were "revictimized" on the witness stand. "It's unbelievable what the lawers do to these kids, and it's allowed," said Patricia's mother. "The system," says Deputy D.A. Lael Rubin, "is not set up to protect child witness." "When you hear repetitive questions," Rubin declared, "there's only one intent: to intimidate the child."[31] As a result of this trial and with more and more young witnesses now being called in abuse and molestation trials, new legislation has been passed in California. This was the first legislation in the U.S. allowing simultaneous, two-way closed-circuit television for some children under eleven in molestation cases. The system is designed to separate the accused from the accuser, while allowing each to see and hear the other on TV screens during testimony.[32]

3.

As adults we are tempted to ignore or punish children's distress stories or indications because we really do not want to know about child sexual abuse. Recognition of sexual molestation in a child is entirely dependent on the individual's inherent willingness to entertain the possibility that the condition may exist. If we refuse to believe that it can happen, we will not see it when it does happen and will conclude that children lie about these things. The most important thing we can do when we suspect any abuse is to believe the child and act quickly to intervene.[33]

Despite the growing estimates of sexual abuse cases, most children receive little information to protect them from this offense. Warning about strangers does not alert them to the possibility that an abuser could be a person they know and trust. Children are rarely told that they have the right to control who touches them and that they should say no to an inappropriate touch. Nor do many understand that they don't have to keep a promise of secrecy made to an adult. Children are in great need of realistic information about sexual abuse in order to avoid being tricked or misled into undesirable situations solely out of ignorance.[34] Most parents and educators don't discuss sexual abuse with children until it occurs. Their reluctance to present information about this topic stems from their own anxiety and discomfort, as well as their lack of knowledge about the prevalence of this offense.[35] Because they cannot envision young children as victims, many worry that they will frighten children needlessly or make them wary of affection from all adults.[36]

At issue is not whether talking, kissing, or being friendly should be discouraged, but that a child's discomfort in physical contact with a stranger should be respected. Encouraging children to trust their feelings can help them be alert to situations in which they may be exploited. One should not laugh if a child runs from a situation an adult considers benign but should encourage him to talk to you about his feelings later. He may not, however, have reasons that he can put into words.[37] If one thinks someone is exploiting a child, one should make time to listen to him and give him a chance to sort things out with you. One's first concern must be the child's well-being.[38]

Educators have both a moral and legal obligation to report any reasonable suspicion or known case of child sexual assault to the police, child protective services, or the appropriate social service agency. The law states that

teachers do not have to prove the existence of such abuse, nor do they have to know who did it. If further investigation indicates that there was no offense, teachers who reported in good faith are protected from any possible prosecution. On the other hand, teachers who had reasonable knowledge of an incident and did not report it can be prosecuted.[39] Reports are generally followed up by a visit from a child protective services worker or a representative of the reporting agency, often in the home or at the school site.

Teachers or parents should consult with the child protective services worker about the need for the child to receive a medical examination. If so, adults should carefully select medical personnel trained in handling sexual abuse cases. Such individuals can explain the reasons for the examination and can reassure children that their bodies haven't been changed by this experience. Some children may also benefit from the opportunity to discuss the event with a psychologist, psychiatrist, or family counselor. Parents may also need professional help, since they often bottle up a great deal of rage and emotion.[40]

When a child is molested by someone not known to him or her, it is usually treated as a crisis. If the child has been taught about sexual abuse, he/she will more than likely go to a trusted adult for help. The adult's response at this point is critical. If the parent, teacher, family friend, etc. reacts with horror and disbelief, immediately moving into crisis himself, the child will become anxious for having "caused" this focus of responses by friends and others trying to help. An alternative response by an adult to a child's disclosure of sexual abuse is to listen carefully and calmly; reassure the child that she did the right thing in coming to tell you; repeat that it was not the child's fault; be clear that you will take care of the situation and protect the child; and then call the police and report the incident.[41]

Teachers who suspect sexual abuse of children should immediately discuss their suspicions with their administrator or head teacher. Dates and observations pertinent to the situation should be carefully noted for future use. If the decision is made to ask a child about a specific problem (for example, injury to the genital area), adults should remember that young children generally lack the cognitive maturity to remember exact details such as times and places. Indeed, younger children may appear less traumatized by sexual abuse than their older peers who have a more sophisticated understanding of the offense.[42] A child should never be asked to confront the accused offender because their denial will only make the event more upsetting.[43] Because educators are in close personal contact with young children, they are in a strategic position to detect sexual abuse. Any report suggesting its occurrence should be addressed immediately, since research indicates that it is extremely rare for a child to invent a story about being sexually molested. Educators should be especially alert to behavior that goes beyond the normal sex play and curiosity of a young child.[44]

Child sexual abuse is perhaps the most disturbing manifestation of sexual violence. Many people have a difficult time imagining that an adult could willfully exploit a child sexually, especially an adult related to a child. Freud was so dismayed by the frequency with which his clients reported sexual abuse as children that rather than face the reality that they expressed he decided that it was largely fantasy. From this erroneous and unscientific conclusion, Freud developed the theory of female sexual fantasy. His conclusion that the reports from his female clients of sexual abuse of fathers were untrue provided a pseudoscientific basis for the collective denial that children are sexually abused in the family.[45] No one wants to admit the reality of child sexual abuse, no eyes and ears are closed to its victims who seek help. If no one "sees" it, then it is believed not to exist. While this topic is highly distressing to most adults, the growing number of media reports on child molestation and the statistics concerning its prevalence emphasize the need for early childhood educators to take an active role in preventing the sexual victimization of children.[46]

Educators can play a critical role in prevention, detection, and intervention efforts related to child sexual abuse. To take effective action against this problem, educators must be knowledgeable about sexual abuse, alert to its symptoms, and prepared to report and follow up on suspected cases.[47]

NOTES

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[2]B. Justice and J. Justice, *The Broken Taboo: Sex in the Family* (New York: Human Sciences Press, 1979) p. 182.

[3]Marie M. Fortune, *Sexual Violence: The Unmentionable Sin* (New York, N.Y.: The Pilgrim Press, 1983) p. 164.

[4]Sexual Assault Center, Harborview Medical Center, Seattle, Washington, 1979, p. 9.

[5]Justice, pp. 165-166.

[6]Justice, p. 5.

[7]Justice, p. 10.

[8]Justice, p. 10.

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[11]Marilyn Marshall, "How To Protect Your Children From People They Trust," *Ebony*, November 1986, p. 48.

[12]Marshall, p. 48.

[13]Marshall, p. 50.

[14]Marshall, p. 52.

[15]Marshall, pp. 52-53.

[16]Fortune, p. 170.

[17]Fortune, pp. 169-170.

[18]Beth Romaine, "Coping: For One Sex-Abuse Victim, The Solution To The Nightmare Was Simple but Scary: Speak Up," *People Weekly*, Vol. 26, September 8, 1986, p. 99.

[19]Romaine, p. 99.

[20]Romaine, p. 103.

[21]Romaine, p. 103.

[22]Romaine, p. 103.

[23]David Beckwith, "The Youngest Witness: Is There a "Witch-hunt" Mentality in Sex-abuse Cases?" *Newsweek*, Vol. 105, February 18, 1985, p. 72.

[24]Beckwith, p. 73.

[25]Joshua Hammer, "The Brave Testimony of a 10-year-old Girl Convicts her Former Foster-father," *People Weekly*, Vol. 24, June 8, 1985, pp. 28-29.

[26]William Plummer, "The Youngest Witness in the McMartin Sex

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[27]Plummer, p. 28.

[28]Plummer, pp. 28-29.

[29]Plummer, p. 29.

[30]Plummer, p. 29.

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[34]Sally Koblinsky and Nory Behana, "Child Sexual Abuse: The Educator's Role in Prevention, Detection, and Intervention," *Education 86/87*, (The Banta Company, Menasha, Wisconsin, 1986) p. 181.

[35]L. Sanford, *The Silence Child* (New York: McGraw Hill, 1982) p. 93.

[36]Koblinsky, p. 182.

[37]Joan Costello, Ph.D., "Talking About Touch," *Parents*, Vol. 61, March, 1986, p. 180.

[38]Costello, p. 180.

[39]Koblinsky, p. 188.

[40]Koblinsky, p. 188.

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CHILD ABUSE: AN INTERVIEW

Vicky Richardson

Vickey Richardson: What is your name?
Sally: Sally. (I use her assumed name.)

Vickey: Where do you live now?
Sally: In a foster home.

Vickey: How old are you, Sally?
Sally: 18

Vickey: Do your foster parents treat you well?
Sally: Yes they do. I've been there so long I am just like one of their own children, and I'm treated that way.

Vickey: Why do you live in a foster home?
Sally: I was sexually abused.

Vickey: Who was your abuser?
Sally: My step-father.

Vickey: How long did this happen?
Sally: It started when I was 3 years old and ended when I was 14.

Vickey: Why didn't you ever tell anyone before then?
Sally: I was threatened very badly.

Vickey: What kind of threats, Sally?
Sally: He said he would harm my mother and my friends, and I really feel that he would have.

Vickey: Did your mother know about this?
Sally: Yes, she did.

Vickey: What were her reactions then and now?
Sally: Well, then she would always get angry, and we would leave my step-father and go to my relatives; but we would always go back home. Now as I said, I live in a foster home so I take it as her saying, "I believe him over you."

Vickey: How did it all finally come out into the open?
Sally: I told my best friend, and she went home and told her mother; then her mother called an attorney; and in turn he called a social worker to come to the school and speak with me; so she did. I didn't go home after that.

Vickey: What was your abuser like?
Sally: He was a typically strict man and extremely religious; in fact—he was an ordained minister.

Vickey: How did he gain your unwilling cooperation?
Sally: If I ever wanted to go somewhere and do something, I would always have to do "something" with him. I was very scared of him.

Vickey: How did he behave after each incident?
Sally: It never failed; after each time he would say, "I'm so sorry Sally, please forgive me, it will never happen again, I promise." But it always did, so I never believed him. I always told him I forgave him, although I never did in my heart, and to this day I still don't! I told him one time I didn't forgive him and he slapped me, then he apologized once more.

Vickey: When was he brought up on charges?
Sally: He was arrested and charged the same day I left home.

Vickey: What were the charges?
Sally: First Degree Rape, Sodomy, and Incest.

Vickey: Is he in jail now?
Sally: No, he isn't.

Vickey: Why not?
Sally: Because he had a chance to appeal the case and he did so; we are waiting to see if he gets it, but he was found guilty.

Vickey: How long have you been fighting this in court?
Sally: Approximately or close to 4 years.

Vickey: What do you want to happen?
Sally: I want him sent to prison.

Vickey: Will you ever return home?
Sally: No, I will not.

Vickey: Why not?
Sally: Because I'm content with the life and the family that I have and I couldn't change my life so dramatically again—never!

Vickey: Do you have any comments?
Sally: Yes. I would like to say that as terrible as it was I feel that it happened for a reason. My life hasn't been affected by it very bad at all. In fact, I have very wonderful foster parents (whom I consider my Mom and Dad) and I also have a very understand-

ing boyfriend. He knows about the abuse also—he and my foster parents have been and still are a wonderful blessing in my life. Also, I'm in college, I'm going to be a social worker.

This case was a really terrifying one but the young lady turned out better than most people would expect. Her life is completely turned around, and she is a very strong-willed young lady.

Editor's Note: This interview was conducted by a Western freshman while preparing a term paper on the abuse of children. She interviewed a fellow student.

THE EFFECTS OF ROBOTIZATION ON THE WORKFORCE

Lisa Majdi

The introduction of robots into the workplace presents a milestone in the history of industrialization. Robotization will revolutionize industry, and the resulting increase in productivity will eventually bring a better world for mankind. Adjusting to what is being called the third industrial revolution will be difficult and sometimes painful for managers and workers alike; however, it is important to establish the concept of robots as helpers of mankind rather than hinderers.

Articles in the technical and popular press have discussed the potential of robots to boost U.S. industrial productivity and to enhance the competitiveness of the United States in the world economy. Other authors have concentrated on the effects of robots on employment and their potential to change the workplace environment and alter the nature of work.

For the foreseeable future robots, at least in industry, will be limited to specialized, repetitive tasks. The possibility that robots would be a threat to society as a whole is remote indeed. Properly implemented, the use of robotics can relieve human drudgery, raise skill levels, improve the nature of work itself, stimulate the economy, raise living standards, and make for a more prosperous society.

1.

Whatever the industry or the technology, it is feared that jobs will be lost as a result of robotization. It is estimated that 20,000 extra jobs will have to be found daily for five years in order to reduce unemployment levels in the industrial nations to what they were in 1979. The question of whether or not robotization adds to this problem is important (*The Economist,* 1984, p. 71).

A Carnegie-Mellon study has suggested that in the more sophisticated industrial applications of robots, more than three million out of a total of eight million manufacturing "operatives" would be displayed in twenty years. Most observers agree that the job displacement rate through 1990 may only be one percent of the total labor force in manufacturing (Hunt and Hunt, 1983, p. 67). Those affected would come primarily from industries making automobiles, electrical equipment, machinery and fabricated metals (Martin 1982, p. 14). It is in specific industries, such as automobiles, that an annual displacement rate of six percent to eleven percent can be expected (Guest, 1984, p. 10). Clearly, this level of displacement will present problems for these sectors of the economy.

Only 20 percent of American nonfarm workers are in manufacturing now, compared to 30 percent in 1965 and 34 percent in 1950 (Ross, April 1986, p. 78). Automation is reducing the number of manufacturing jobs available for production workers, and this trend is accelerating. The automobile industry has received the most attention from the media because it employs the most robots today. It is hard to assess statistics in the automobile industry because unemployment and displacement due to robotics in this industry took place at the same time that the industry was undergoing intense competition from foreign manufacturers and during the industry's worst period since the Great Depression.

A special problem in the United States is that certain regions of the country will feel the impact of robotization more than others. This will make the effect not unlike the regionalized impact of structural unemployment. The degree of actual dislocation that occurs will depend upon the timing of the spread of the new technology, the rate of natural attrition of the work force, and the policies of the government (Ayres and Miller, 1982, p. 37).

There is widespread fear among workers that technological upgrading of the economy will create large scale labor force dislocations—millions may lose their jobs through no fault of their own. However, most industrialists are confident that eventually the new technology will—as in the past—create more jobs than it destroys. But "eventually" may mean a decade or a generation. Moreover, the types of "good" jobs which remain may be fewer in number than the number of jobs which reward less.

So far it is the hot, heavy, and hazardous tasks performed by relatively unskilled workers that robots have taken over. But as robots become more sophisticated and threaten more than the repetitive jobs, a conflict could emerge between employees and management over the implementation of robotics and the displacement that it will create in the workforce.

Management is coming to recognize that it is difficult at present to justify the replacement of human labor with a robot based upon economic consideration alone. In some industrial applications the economics indicate a clear-cut choice of a robot. But in many other applications decisions to invest in robotics are approved for noneconomic reasons such as gaining experience with robots or keeping up with the competition (Sullivan and Liu, 1984, p. 118). However, as robots become less expensive and manual labor more expensive, management will probably return to improved economics as the key ingredient of go/no-go decisions regarding capital investments in robots.

2.

The silent hope of many bosses, owners, stockholders, employees, and government leaders is that new technology will spawn new information and service jobs and create new

(if different) industrial jobs as costs of robots are lowered and productivity increases. Because robots can improve efficiency substantially, thereby lowering costs, there would be an increase in both domestic and foreign demand for lower-cost products. This could lead to an across-the-board expansion of the economy and hence increased employment (Fisk 1981).

The Robot Institute of America predicts that only a small segment of the work force will lose jobs as a direct result of robots (Martin, 1982, p. 7). Hunt and Hunt (1933, p. 87) predict that by 1990 there will be upwards of 64,000 new jobs directly related to the manufacture and use of robots. Timothy Hunt, of the Upjohn Institute for Employment Research, estimates that from 50,000 - 100,000 robots will be installed in the United States by 1990, costing from 100,000 - 200,000 factory floor jobs, but creating 32,000 to 64,000 jobs in robot manufacturing, systems, engineering, and at robot users' plants (Ross, 1986, p. 79).

Perhaps even more important from a career opportunity standpoint is what might be called the "ripple effect" of robotics. Who is going to design and build all the robots? Who will integrate them into a manufacturing plant? Who will install and service them?

Currently there are no good survey statistics on robotic industry employment; certainly none for robotic "engineers." According to the Engineering Manpower Commission (Washington, D.C.?, robotics is too new and small a category to be pulled out and neatly separated. A persistent shortage of qualified personnel is implicit because of the need to draw some of the required personnel from other user or vendor organizations (all of whom would be experienced) and the apparent need to retrain large numbers of in-house personnel (Nagler, 1985, p. 59). As a corollary, robot users are retraining their work forces as a matter of need as well as good corporate citizenship.

Michael F. Bryan, an economist with the Federal Reserve Bank in Cleveland, estimates that manufacturing activity accounted for 24% of gross domestic product in 1985. That is just barely below the 1950-1985 average of 24.7% (Ross, 1986, p. 80). This also means that outside of certain industries the number of management jobs is actually growing in manufacturing. The new tasks made possible by robotics necessitate new managers to handle them:

* Robos increase capital requirements and add to the complexity of accounting chores.
* Robots increase fixed cost, adding to pressure on sales staffs to bring in a steady stream of orders and heightening the risks of strategic planning staffs.
* Flexible production with robots allows flexible marketing and advertising with numerous small product changes that will capture narrow segments of consumer taste.
* Flexibility also requires that managers keep closer track of raw materials, work in progress, and finished goods.
* Robots allow some products to be made that otherwise would not be—for instance, products that require handling hazardous substances.
* Robots allow some services that wouldn't otherwise be possible—same-day shipping of orders from automated warehouses, quantity discounts for mixed-item orders, and so forth.

"Actual applications of automated technology lag in comparison to the vast array of technologically advanced systems currently available," according to Dr. Jack J. Bainter, director of the ITT Technical Institute in Fort Wayne, Indiana (1986). In other words, there's a lack of managers and technicians who can use the available technologies on the plant floor.

Robot salespeople are hesitant to sell to small companies however, because they've found that few small companies have the depth of management to handle robot maintenance, emergencies caused by robot downtime, and software modifications. They must depend on outside consultants and the original supplier (Ross, 1986, p. 80).

As companies are able to make and warehouse a wider variety of products with the same or fewer employees, more skilled managers are necessary to coordinate robot purchases and maintenance, shipping times, inventory intake, and so forth. Much of the demand is for engineers or for managers with technical backgrounds. In addition, knowledgeable people are needed to market the automated equipment and provide customers with ongoing services.

The type of engineering degree (mechanical, electrical, manufacturing) seems not to make much difference. There is such a sufficient variety of tasks within both vendor and user organizations that there is opportunity for all. What does seem to be important to recruiters is specific college courses taken. The more closely these match a recruiter's needs the more likely for success.

3.

The literature on robotics is in general agreement that a large amount of training or retraining will be necessary as robotic technology expands. One authority called retraining "the major social problem created by rapid robotization." Many jobs will require a high degree of technical training. Massive programs will be needed to prevent the creation of an over supply of workers whose skills have become obsolete (Vedder 1982). Other authorities question whether we really know how much training would be provided by companies or through our vocational education programs in adapting to robotics.

What one might call "raw college recruits" are now thought to fulfill only 12% of recruiting needs yet are expected almost to double their penetration by 1990 (Nagler 1985). The bulk of recruiting is by robot users rather than by robot vendors. GMF Robotics (Troy, Michigan), the largest manufacturer in the industry, is only now beginning to recruit at a few select universities (Nagler, 1985, p. 60). Most robot vendors advise that they require at least 2 years experience for entry-level positions. That experience might be obtained with user companies or with companies supplying related equipment.

Many young people leaving high school do not have the technical training required to remain employed in highly complex robotic environments. Long before the new wave of robotics, it was clear that the country's educational

system was not providing young people with the necessary skills and discipline needed to function in the new environment (Katzman, 1983 p. 39).

The problem of retaining older workers may be difficult as well. The Japanese are also concerned about this. A survey of 300 companies in Japan underscored the same concern that older workers are "unable to adapt to the new working environment." Centron and O'Toole (1982, p. 16) conclude that it will be more difficult for older workers to pick up the new technical skills involved in robotics. As they put it, "If you are 40 or over you like to think you've mastered whatever you've been doing. Suddenly what you've mastered is no longer needed."

If the introduction of robotics into a plant is not to result in unemployment, a program of retraining displaced workers to take on new jobs will be necessary. Retraining also may be required for those workers who remain because their existing jobs will change in form and function even if their job titles remain the same.

4.

Companies everywhere are coming out of the recession with the profits to pay for new technology that will cut costs and the desire to introduce robotics into the workplace. In the American automobile industry, one robot can do the work of up to six workers. Each employee costs $23-24 an hour in wages and benefits. The robot can do all their work for $6 an hour, including depreciation and maintenance (*The Economist*, 1984, p. 71).

Robotization clearly affects traditional incentive systems. Individual and small group incentives will no longer be used inasmuch as those coordinating robot operations can do little to augment the quantity or quality of the product given the self-regulating electromechanical devices controlling the rate and quality of productions (Katzman, 1983, p. 39).

5.

Easy transition to the higher incomes and the additional leisure time that new technology offers may be hampered in that workers are not owners. If they were part-owners of the firms they worked for they could welcome inventions that displaced jobs: progress would mean less work without loss of income. If workers depend entirely on wages, it is in their economic self-interest to resist.

A Carnegie-Mellon Study (Argote, Goodman, and Schkade, 1983, p. 34) asked workers to compare their present robot-controlled jobs with their previous machining and grinding opreations. Some of the results may be colored by the fact that the robots had only been installed recently. But they showed that there was a longer work cycle and more complicated set-up times. The workers said the new job required more skills in checking all details and in programming the robot. They felt they had greater responsibility. The authors speculated that in time, when operations become more routine, the jobs may not require high-level skills. They warned that if over time "the robot decreases variety, autonomy and challenge, or if it introduces activities that are incompatible with workers' abilities or preferences, then attitudes could become more negative and their motivational levels are likely to fall."

For those large numbers of workers who will continue to perform routine work and are not in the category of robot operators (or whose jobs have been eliminated entirely) there are problems. A rigid stratification hierarchy could develop. Such stratification inhibits upward mobility, causing frustration among a large number of regular workers or new untrained workers hired for the routine unskilled or semiskilled jobs. There could be a sharp devision between workers with high technical skills and other employees doing regular nonautomated work.

The changes in job structure could also mean changes in career patterns, channels of promotion, and job security. With small work forces in robot-dominated operations, with fewer job classes and fewer levels of supervision, the promotional ladders, according to Katzman (1983, p. 39), "could be shortened or shattered." There could be less opportunity for advancement into supervisory positions. Current skills will be useless and the new requirements (for robotic jobs) will be ones that workers may not have the training or education to satisfy.

6.

The Japanese, who lead the world in robot installations, also lead the world in robot fatalities. There have been reports of at least five and possibly as many as twenty such deaths (Freifeld, 1983, p. 143).

In this country, companies are not required to report injuries related to specific equipment, so no reliable data are available. But in Sweden, one study estimates that there is one accident a year for every 45 robots (Freifeld, 1983, p. 144). This is because robots move quickly and are programmed to go through a series of motions without stopping. A worker not familiar with the working envelope of the robot can be struck. How will industry minimize the risk of its workers? Probably with difficulty. Robots do not easily accommodate safeguards.

In a robotized assembly process, maintenance workers may be struck by robots adjacent to the ones they are servicing if they do not recognize or understand the sequence of motions of the working robot. A robot may perform a task five times and then start on a completely different activity and with it a different set of motions. A robot can remain idle for a period of time and suddenly be reactivated again, threatening injury to a worker who mistakenly thought it was shut down. Thirty percent of robot accidents seem to be caused by runaways, according to John Moran, director of the division of safety research at the National Institute for Occupational Safety and Health (Freifeld, 1983, p. 143).

What is now being done to make robots safer? Right now, not much. "The extent of most safety precautions are signs saying, 'Restricted Area: Keep Out', or maybe a guardrail," according to Howard Gadberry of the Midwest Research Institute in Kansas City, Missouri. The most common safeguards are perimeter barriers such as guardrails and electric interlock gates, which automatically shut down the robot

when opened.

7.

The long-range potential of totally automated manufacturing is literally beyond our capacity to predict. It may change every aspect of industrial society. Automatic factories that can operate without human labor, and reproduce themselves, could lead to an entirely new era in the history of civilization.

Many people question the desirability of rapid, massive deployment or robot technology. Despite the obvious benefits from productivity improvement, there would be serious social and economic adjustments necessary as a result of such a rapid productivity growth. Productivity improvements by their very nature reduce the amount of human labor needed to produce a given product.

However, widespread unemployment is not the inevitable result of rapid productivity growth. There is not a fixed amount of work. More work can always be created. All that is needed is a way to meet the payroll. Markets are not saturated. The purchasing power of consumers can always be increased at the same rate that more products flow out of the robot factories. At present there is an abundance of demand. The mere fact of inflation is *prima facie* evidence that consumer demand exceeds the ability of present production techniques and facilities to supply goods and services at constant prices. Work is easy to create. Demand is also. What is hard to produce is goods and services that can be sold for a profit at (or below) the current market price.

Nevertheless, the average citizen is unconvinced that advanced automation would necessarily put increased spending power into his or her pocketbook. The question is: If the robots have most of the jobs, how will average people get their income? In order for most people to be convinced that robots are going to bring more benefits than problems, it will be necessary to demonstrate that a variety of alternative income producing occupations will be created to fill the void left by those jobs which are taken over by robots.

It will be many years, perhaps even decades, before robots can design, install, repair, manufacture, and market themselves from start to finish with little or no human intervention. In the meantime, the manufacture and servicing of robots will produce an enormous demand for engineers, technicians, computer programmers, and robot installation and repair persons.

In general, industries that use the most efficient production techniques grow and prosper and hire more workers. Markets for their products expand and they diversify into new product lines. Workers desplaced by automation are simply transferred into new growth areas or retrained for different occupations. It is in the industries that fall behind in productivity that job layoffs are prevalent. Inefficient industries lose market-share to competitors, shrink, and eventually die. Thus the biggest threat to jobs is not in industries that adopt the latest robot technology but in those which do not.

For example, there are almost one-half million jobless workers today in the American automobile industry. A major contributing factor is foreign competition producing the same goods at a higher quality level through a more advanced assembly process system with a lesser cost to the consumer. U.S. auto workers are suffering unemployment more because of robots in Japan than because of robots in Detroit. If America continues the present low rate of productivity growth, we cannot help having even greater unemployment. Foreign trading partners are modernizing at a rapid rate. If we do not innovate, our products cannot compete, and our workers will find their jobs being taken away by foreign competition.

It is time that people recognize robots to be another type of automation that must have its place in U.S. industry. Jobs will be lost in any factory or any nation where productivity falls in relation to that of the competitor. These shifts and losses are infinitely larger than those due to the introduction of robotics.

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RATIONAL PORTRAYAL OF THE IRRATIONAL IN "THE PIT AND THE PENDULUM"

Sara Lois Kerrick Bachert

"The Pit and the Pendumlum," the story of a prisoner's torture during the Spanish Inquisition, is one of Edgar Allan Poe's most terrifying tales. Other stories may describe more horrific events (such as the gruesome slayings in "The Murders in the Rue Morgue"), but none makes the reader shudder more violently than when he descends into the dungeons of Toledo. This chilling effect comes from a surprising source. Instead of relying on histrionics, Poe describes the unspeakable terror with a rational, calm method based on facts, not feelings. These facts are presented by the narrator, who discusses them in terms of the five senses—sight, sound, smell, touch, and taste. As a result, the reader empathizes with the victim, who is shown as a reasonable man almost destroyed rather than as one of the raving lunatics so often depicted in Poe's tales. Just as the victim alternately feels hopeless terror and then relief, so does the reader as he shares the same situations. The reader is drawn into the tale by Poe's reasonable and believable depiction of the unreasonable and unbelievable events.

Horror stories are successful if the reader is able to feel the victim's pain and fright. Based on that definition, "The Pit and the Pendulum" is a resounding success. The story is "one of the most perfect examples of the treatment of terror according to the principles of Poe's new rationalistic technique," say Margaret Alterton and Hardin Craig (cvi). And the terror is heightened by the "disparity between the casual matter-of-factness of the language and the desperate condition it describes," says David H. Hirsch (642).

Poe's narrator is faced with four elements of terror: the pit, the pendulum, a contracting dungeon, and heated walls (Alterton and Craig 518). He faces each of these in a rational manner—or as nearly rational as his terror will allow. The reader is able to feel his terror because the narrator's rationality also extends to his language. He presents the situations much as a reporter or a scientist would, depending upon senses that everyone shares and understands.

By far the most effective sense is that of sight. The narrator depends greatly upon it, mentioning vision no less than eight times in just the first paragraph. He records matter-of-factly that he saw the white-lipped judges issuing his sentence; the lips writhed "with deadly locution" and fashioned "the syllables of my name" (Poe 367). By providing such minute details in a reportial manner, Poe ensures that the reader also can see the terrible scene.

However, vision is important in the story even when it is impaired. At the beginning of his incarceration, the narrator is blinded by darkness; he cannot tell where he is or what horrors await. By depriving him of vision, Poe has deprived the narrator of his usual experiences, according to Arthur Hobson Quinn (92). At this point, imagination becomes a greater torture to him than the cell's devices (Howrth 19). Handicapped, the narrator must depend upon touch to explore his cell's regions; and it is no wonder that by relying on only one of his basic senses he badly miscalculates the cell's dimensions. Only by accident does the narrator escape the pit during this period of blindness. When his vision is restored, he discovers this near fatality and his cell's true size. And with its restoration, he is better able to face the other horrors, such as the pendulum. By watching it swing, he calculates its descent and devises a way to escape.

Vision continues to be an integral part of the story as the narrator describes the dungeon and its instruments of torture. Perhaps vision is no more important than in the scene when he must watch the razor-sharp pendulum swing closer and closer toward his bound body. As an objective reporter, he recalls, "I now observed—with what horror it is needless to say—that its nether extremity was formed of a crescent of glittering steel, about a foot in length from horn to horn; the horns upward, and the under edge evidently as keen as that of a razor" (Poe 376).

The reader can readily "see" the horrors, and the use of the other senses ensures that he can accurately picture the narrator's predicament in all dimensions. For example, the victim depends upon touch and sound to describe much of his terror—from his sentencing to his rescue.

Just as the absence of sight heightens the horror, so does the absence of sound. The narrarator says the death sentence was "the last of distinct accentuation which reached my ears" (Poe 366). The judges' voices became an indistinct hum, and then the victim heard nothing; he had fainted. Awakening, he hears his heart beat—an act which is usually silent but seems unusually loud when we are startled or scared. By virtue of Poe's reportorial technique, it is easy to picture the victim lying in his cell, all alone, listening to the pounding of his heart grow faster and louder as he becomes more aware of his state. Later sound becomes even more important as the narrator relates his experiences with the pendulum and the pit. He attempts to use sound to determine the pit's depth; by throwing a stone below, he hopes to hear it hit the bottom. But the stone's trip is not short. "For many seconds I hearkened to its reverberations as it dashed against the side of the chasm in its descent; at length there was a sullen plunge into water, succeeded by loud echoes," he says (Poe 373). Thus without describing the pit in terms of feet and inches, Poe lets the reader know that it is extremely deep—as deep as can be imagined. As the victim does, we can only imagine how it would feel to fall into the chasm and the unknown waters below.

The pendulum also has its terrifying sounds. As the narrator listens to the "hissing vigor of its descent," he forces himself to imagine what it will sound like when the razor frays his robe (Poe 378). Sound plays a part again in the last torture when the narrator is forced to listen to the dungeon's walls rumble and moan as they move toward him.

Although the narrator feels the sharp pain when the pendulum nicks his chest, the sense of touch is more important in describing the pit and the dungeon. The victim discovers the pit by accident when, blinded by darkness, he falls to the floor. There he makes a strange discovery— ". . . my chin rested upon the floor of the prison, but my lips and the upper portion of my head, although seemingly at a less elevation than the chin, touched nothing," he report (Poe 372). This puzzles the reader as well as the victim, and it fuels the imagination, adding to the sense of horror. However, touch is used even more effectively to describe the cell's particulars. Just as a reporter would do, the narrator writes of the smooth, cold walls and the slimy floor; he tells about the cold drops of perspiration on his brow; and he describes the searing heat of the walls.

Taste and smell, likewise, are used to fully portray the horror. As one of the tortures, the victim's persecutors stimulate his "intolerable thirst" (Poe 375). While this may seem to be a milder torture than that of the pendulum, it is one with which any reader can identify. Excessive thirst, as Poe realizes, can be even more torturous than hunger, since even savory meat (a meal fed to the prisoner) is less satisfying when it cannot be washed down with water. The victim's dinner may have an appealing scent, but other smells are less pleasant—the narrator and the reader are terrified by the smell of decay, the odor of steel as the pendulum sweeps closer, and the strench of heated iron as the walls close in.

Poe's use of the five senses is imperative to the story for at least two reasons—it enables the reader to understand the narrator's predicament, and it makes an extraordinary event seem real. By using senses known to all, Poe ensures that the reader also can feel the terrors lurking in the dungeon. Almost everyone knows what it is like to experience an "intolerable thirst," to smell the stench of decay, and to lie awake at night, afraid to investigate a strange sound. Such common experiences, described in common terms enable the reader to take the victim's place and share his terror. The commonality also makes an unbelievable tale seem almost like a chapter from a history book. Ordinarily, few could believe that anyone would go to such lengths to torture and kill one man. However, the narrator's eyewitness account, based on facts given in a lucid manner, gives a rational tone to the story. The reader readily pictures and believes the outrageous tale, which proves Poe's prowess as a writer. By fooling the reader into feeling such terror and by making it all believable, Poe accomplishes what all writers would like to be able to do. For these reasons, "The Pit and the Pendulum" is one of Poe's most successful tales—and one of his most terrifying.

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THE INFORMAL CAREGIVING SYSTEM: THE FRAIL ELDERLYS' AVENUE OF CHOICE

Beth O. Brock

The number of Americans over 65 is growing. The greatest rate of growth is occurring in the age cohort of 85 + years. It is within this group that frailty and dependence on others is likely to be found. Along with this growth is the increased need for support and service to this group.

Who or what will meet the long-term care needs of these elderly? "It is to the informal system of caregivers that an older person will turn when in need of help to continue living independently in the community."[1] These informal caregivers are mainly composed of spouses, children, siblings and/or neighbors. "In general the informal network tends to be structured hierarchically, based primarily on the service provider's relationship to the older person (spouse, near-kin, distant kin and friends), but also on geographic proximity."[2]

1.

Informal supports provide the majority of community services to the elderly. "Preliminary data from the Health Care Financing Administration Long-Term care survey demonstrate that, for the disabled older population living in the community, relatives represent 84 percent of all caregivers for males and 79 percent for females."[3] "States families had one or more family members who were 65 or older."[4]

Of the elderly 80 percent have living children and of these 75 percent living in the same household or within 30 miles. In 1985, 30 percent of all single elderly males and 50 percent of the females lived with their children. "Children of aging parents provide care to about one-quarter of elderly males and to slightly over one-third of elderly women."[5] Others, such as siblings or nieces are also giving substantial care to disabled elderly family members, representing 23 percent of all community care for men and 35 percent for women.

The marital status and living arrangements of older persons varies by sex. Unlike elderly men, most elderly women are widowed and live alone. In 1983, 65 percent of men 75 + lived with their wives while only 21 percent of 75 + women lived with their husbands. While men do assume a caregiving role, the chances of this are much greater for women. However, with increasing age, the support given by either spouse will decrease and other family members will compensate for the loss.

2.

When the age 65 was set to designate the beginning of old age, the reasons were social not biological. There is no set pattern identified that we all age at the same rate with the same amount of bodily function deterioration. "Nevertheless, the proportion of people with health problems increases with age and, as a group, the elderly are more likely than younger persons to suffer from multiple, chronic, and often disabling conditions."[6]

"Eight percent of our older people have one or more chronic conditions and their medical, treatment accounts for about 30 percent of the Nation's health care expenditures."[7] The long term goal of health professionals and providers is to improve the "quality of life" of the aging and give them more years of independent life. "Over the last decade, the proportion of people over 65 who have to place limits on themselves, primarily because of chronic conditions, has fluctuated between an estimated 42 and 47 percent—only slightly less than half the 24 million elderly."[8]

We now live in an age where "wellness" and "quality of life" have become integrated into our everyday language. It is only of late that these words have been introduced into the world of the elderly. "Although the preponderance of research has studied chiefly middle-aged or younger adults, there is a growing body of evidence suggesting that both mortality and morbidity among the elderly are also a function of behavior."[9]

"While the literature is not unanimous (e.g. Branch and Jette, 1984), it seems safe to assume that such health seeking behaviors as not smoking, eating a sensible diet, and observing recommended safety practices are as important for the elderly as they are for the young."[10] What factors are at work that result in the elderly seeing themselves as having little if no control over their future health? There is no large body of research explaining this attitude found among the elderly. It is even more confusing when coupled with the fact that the elderly are more compliant with certain health practices than their younger counterparts. Is then the increasing life expectancy accompanied by improving or declining health among the aged? This is one of the most critical questions in gerontology. "It has profound implications, not only for gerontology, but also for health policy, service delivery systems and the future cost of Medicare and Medicaid."[11]

The trends in a study conducted by Erdman Palmore, M.D., indicate that there has been a consistent and substantial trend toward better relative health among the aged between 1961 and 1981. There appear to be several factors at work to explain these trends (Palmore, 1986):

A) Improved sanitation, innoculations, nutrition and medical care throughout our lives, as well as healtheir occupations, more education, and higher incomes.

B) Medicare and Medicaid were instituted in 1965 and have had a positive affect on healthcare of the aged.

C) "The third possible contributor to this improved health

would be the many economic, nutrition, social, and psychological programs for the aged that were introduced during the past 20 years."[12]

What does the health of the elderly have to do with caregiving? Its impact is tremendous. Studies conducted (Johnson, et. al., 1977) indicate that good health may be an important variable in how elderly parents and their adult children regard their relationship. "At present, poor health can increase the elderly parent's dependency on the adult child with an increase in resentment by the adult child (often caught between caring for his/her own family and caring for the elderly parent), and increasing frustration of the parent, with an over-all poorer relationship between parent and child as the result."[13] "This association between good health and good relationships indicates that intervention strategies for elderly who do experience poor health should not only be developed but should be considered essential given that poor health may exacerbate poor family relationships, and poor family relations have implications for the institutionalization of the elderly."[14]

3.

Support is defined as any physical, emotional, financial, or spiritual elements that help sustain us through the difficult times in our lives. "This 'informal support network' or 'informal support system' is defined as an elder's spouse, living children, sibling, other relatives, friends, and neighbors—those 'significant others' with whom the elder has close contact."[15] It is to this system of support that an older person will first turn to when in need. In comparison to the informal support system the "formal support system" or "formal network" refers to the governmental and voluntary service agencies and the health and other service professions that provide long term care services to elders as needed. When working at their optimal level, these two systems are highly complementary to each other in meeting the needs of the elderly.

The informal system has several advantages over help given by the formal system, however. It is flexible, able to respond more quickly to the needs of the older person and is more individualized. In contrast, formal services are most bureaucratic, structured, and are structured to meet the needs of the elderly population as a whole. Emotional support, an important need of the elderly and their caregivers, is not a function of the formal system. "Formal service involvement is appropriate when the older person requires help that needs specialized skills or knowledge (e.g., advanced nursing care, physiotherapy, etc.) but when a lower level of care is needed, formal services cannot begin to offer the same level of quality of care as the informal system."[16]

The extent of informal caregiving is not as clearly defined as formal caregiving systems. The type and amount of care given to a care recipient depends largely upon the frailty of that person. To preserve independence the elderly person may only require aid with shopping or transportation. The more frail individual may require complete nursing care on a twenty-four hour basis. "Whatever types of assistance are given, whether the older person needs a little or a great deal of "hands-on-care," emotional support is very nearly always given by family and friends and is viewed by them as the most vital help that they provide."[17]

4.

Very little is known about the factors that influence the elderly's use of the informal support system. Why do some elders use informal sources for assistance while others rely on public agencies and/or professionals? "As the report on the Interagency Statistical Committee on Long-Term Care for the Elderly, 1980) emphasized, policy makers must have information on the role of the informal support networks inproviding long-term care assistance for the elderly in order to develop public policy that will complement and support this role rather than displace it."[18]

Studies using the Activities of Daily Living (ADL) instrument indicate that usage of informal care supports is linked to increasing physical disability and living situations for both men and women. Women, however, were more likely to incorporate dimensions of size and health of their children network. Income was not a factor involved in either sex when the decision was made to use the informal network for care.

To remain in the community the elderly must maintain the ability to care for themselves with some level of independence. Data indicates that the elderly were much more likely to call upon the informal system for help in such activities as transportation, shopping and other instrumental activities, than those involved with personal care. However, as the elderlys' physical disabilities increase so do their demands on the informal care system. "It is ironic that existing public support programs for elders do not play a dominant role in facilitation and/or reimbursing elders for services provided in these instrumental areas."[19]

The phenomenon continually reinforced throughout the literature is that if the government is truly committed to keeping the elderly out of long-term care institutions, policy changes are necessary. Government must clearly identify those networks which make up the informal care system and by supporting them it will simultaneously meet the goals it sets forth for helping the elderly.

5.

Informal caregivers include spouses, children, siblings, friends, and neighbors. It is not the formal system that provides the bulk of support to the elderly. Families provide 80 to 90 percent of medically related and personal care, household tasks, transportation, and shopping. Families link the elderly to the formal support system. "It is the dependable family, children or spouses, that provides the expressive support that is most wanted by the old, but that is not counted as service in surveys."[20] Well over 5 million people are involved in parent care at any one time.

According to Elaine Brody, "The family virtually unnoticed invented the word long term care."[21] "The family made this shift from episodic short-term care sooner and more flexibly, willingly and effectively than

professionals and the bureaucracy."[22] Government agencies did not use this term to define the sustained helping service of the elderly until the late 1970's.

Table 1 details the percent distributions of caregivers by relationship to 65 + individuals with activity limitations. More wives than men provide care to their spouses. "More than one-third of all elderly disabled men living in the community are cared for by a wife, while only one in ten elderly disabled women are cared for by a husband."[23]

All statistics indicate that women are the primary caregivers of the elderly and make up the largest group of carereceivers. "Those caring for functionally impaired elderly family members are predominately females with adult daughters providing 29 percent of long-term care and wives providing 23 percent."[24] The majority provide assistance seven days a week, an average of four hours a day.

It is these adult women who have been called the "sandwich generation." In her fifties, this daughter is not only caregiver to an older parent but frequently has teenage children who also demand care and attention and thus is pressed by generations on either side demanding care.[25]

Table 1

PERCENT DISTRIBUTIONS OF CAREGIVERS BY RELATIONSHIP TO 65 PLUS INDIVIDUAL WITH ACTIVITY LIMITATIONS

Age of recipient and relationship of caregiver	Care recipient	
	Male	Female
65 to 74:		
Spouse	45	18
Offspring	21	29
Other relative	21	33
Formal	13	20
75 to 84:		
Spouse	35	8
Offspring	23	35
Other relative	25	36
Formal	19	23
85+:		
Spouse	20	2
Offspring	34	39
Other relative	27	36
Formal	19	23
All 65+:		
Spouse	37	10
Offspring	24	34
Other relative	23	35
Formal	16	21

6.

Recent trends in society have seen the number of women in the workforce increasing. Now 55 percent of all working aged women are either employed or looking for work. "Women are expected to account for two-thirds of the growth in the labor force at least through 1995 – in that year one-third of the total labor force will be women ages 25 to 54."[26]

Many studies have explored the effects of women's work-force participation on the care of elderly parents. They endeavor to answer the questions: Do the disabled receive less care when daughters work? Does the apportionment of care among various informal and formal providers differ when daughters work? Does the level of care differ among working and non-working daughters?

It has been found that caregiving daughters who work did not give fewer hours of service than did non-working daughters. "The work-status of the caregiving daughters was, however, associated with variations in the sources of some kinds of assistance."[27] "The variations occurred both in the apportionment of help among the various members of the informal network, and in the overall balance between the informal and formal systems."[28]

Women in the working force will, however, engage paid help more often than their counterparts. The two types of task most often shared with others are personal care and meal-preparation. This behavior can be correlated with the overall socio-economic status of the caregiving family. Caregivers of lower socio-economic status are more likely to provide the care themselves or employ spouses, friends, children and neighbors services.

However, it should be noted that the majority of women preferred their children over others to provide emotional support, financial management, and grocery shopping. "It is striking that when surveyed, the daughters provided the overwhelming bulk of help with these very tasks—a level of assistance that was stable regardless of the daughter's work status."[29] Work does conflict with caregiving responsibilities. "While less than 10 percent of the 2.2 million persons providing care to functionally impaired elderly relatives quit their jobs to care for the elderly, a sizeable portion of working female and male caregivers have had to rearrange their schedules."[30]

"Whatever processes operate, however, findings suggest that non-institutionalized dependent elderly are not suffering neglect due to the increased work-force participation of daughters who are their traditional principle caregivers."[31] Neither does the participation of women in the labor force increase the use of government subsidized community service and subsequently the taxpayers burden.

"Data from the National Long Term Care Survey indicates, only 4.3% of the persons receiving help with activities of daily living (an intense level of caregiving) were being provided with government subsidized assistance from the formal systems."[32] Formal services account for less than 15 percent of all "helper days of care." When it becomes necessary to employ outside help, services are privately paid by the caregivers.

7.

Why, if all the data indicates that children supply the bulk of care to elderly parents, does a myth that shakes the very foundation of caregiving survive? The myth is that "adult children now-a-days do not take care of their elderly parents as they did in the good old days."

A symposium, sponsored by Duke University and the Gerontological Society examined this myth. "They agreed that many programs for older people were based on social myths that had persisted because the assumptions on which they were founded had not been scrutinized by scholars."[33]

Table 2

SELECTED CAREGIVER CHARACTERISTICS BY RELATIONSHIP OF CAREGIVER TO DISABLED ELDERLY PERSON, 1982
(Numbers in thousands)

Caregiver Characteristics	All caregivers	Relationship of Caregiver to Disabled Elderly Person (Female) Spouse	Child	Other	(Male) Spouse	Child	Other
Number	2,201	500	637	438	282	186	158
Percent	100.0	22.7	28.9	19.9	12.8	8.5	7.2
Primary caregiver, only	32.8	60.4	23.0	17.5	55.4	10.8	13.1
Lives with disabled person	73.9	99.3	60.6	54.0	98.6	60.6	73.3
Children less than 18 yrs. in home	21.1	5.8	24.2	36.8	5.2	24.5	37.9
Working	30.9	9.9	43.5	32.9	12.3	55.1	45.7
Quit work to become a caregiver	8.9	13.5	11.6	2.9	11.4	5.0	0.8
Not working for other reasons	59.7	76.2	44.7	64.2	76.3	39.9	53.5

Notes: "Other includes sons or daughters-in-law, siblings, grandchildren, other relatives and nonrelatives. "Disabled" is defined as being limited in one or more activities of daily living, e.j., eating, bathing, dressing, getting in and out of bed or chair, getting around inside.

Source: 1982 National Long Term Care Survey/Survey of Caregivers, U.S. Department of Health and Human Services.

"Kent characterized the idyllic generation household of the earlier times as the "illusion of the Golden Past."[34] This myth has survived despite the irony that "now-a-days" adult children provide more care and more difficult care to more parents over a longer period of time than they did in the good days. Also for many of todays women parent care will not be a single time-limited episode in the life course. The act of caregiving may be replayed several times in an individuals life span.

Why is the life or death of this "Hydra-headed monster" so important? "By its very power it can inhibit constructive practice and policy approached."[35] Several explanations have been given for the immortality of the myth.

A) At some level of awareness, members of all generatiions harbor the feelings that they should reciprocate the care parents gave to them.
B) "The truth" to which the myth speaks is that adults cannot and do not provide the same total care to their elderly parents that those parents gave to them in the good old days of their infancy and childhood."[36]
C) "The myth exists because of the disparity between standards and expectations on the one hand and the unavoidable realities on the other hand."[37]
D) The myth lives on because it thrives on the guilt of disparity. The fantasy is always "somehow" one should do more.

"In completing the feedback loop, by exacerbating the guilt the myth contributes to the strains of parent care."[38]

8.

"Parent care has become a normative but stressful situation for individuals and families and its nature, scope and consequence are not yet fully understood."[39] Assisting the frail elderly involves worry, strain, life-style changes and adjustments to caregivers. "The extent of impact on the everyday life of the caregiver appears to be clearly related to the closeness of kinship bond and the availability of the caregiver for continual involvements."[40] The impact is most severe on spouses, followed by children and the other relatives. "The major adjustment, of cases studied, was personally restrictive—giving up something to provide the time to care for or socialize with the homebound elderly."[41] The more committed one is to familism the greater the belief that caregiving is a family role. "The more caregivers feel that family members have a responsibility towards other family members and involvement in the sense of family is a positive value, the more likely they are to feel strain."[42]

Looking back at the myth of caregivers discussed earlier, its life is found to by perpetuated by current social policies. This perpetuation increases guilt and adds to the strain of caregiving. Services that are urgently needed to release some of the pressure of caregiving are not always being provided and when they are service distribution is uneven. The very language used by social services adds stress to the caregiving situation. "The injunction issued not to "supplant" family services, though research evidence indicates that services strengthen family caregiving (Horowitz 1982)."[43] Government programs suggest "incentives" for family care, implying that family caregivers must be induced to aid their elderly. The list continues; institutionalization versus community care, family care versus formal care, and respite care versus training programs to build caregiver skills.

Caregivers are a very determined group, despite the strain associated with caring for the frail elderly. "Caregivers handle the dilemmas of conflicting demands and interpersonal strains not by denial of responsibility but through considerable personal sacrifices."[44] It is only when they are unable to provide the level care necessary to maintain the elderly in the home that caregivers opt for institutionalization or other forms of formal care.

9.

There are many formal support systems that have evolved in an effort to lighten the burden of caregiving and strengthen the informal network. "Several demonstration

projects have looked at ways in which the caregiving system can be effectively supported without its role being undermined."[45] "A study (Scott, et. al., 1985) provided empirical evidence that formal services, when used, are being used in conjunction with support from children and friends rather than to take place of informal services."[46] The kinds of help which have proved most supportive are: education, knowledge of available resources, respite and recognition by others of the care being provided.

Education about the process of aging has been helpful in relieving caregivers' stress. The teaching of caregiving skills necessary to care for the carereceiver can remove some of the undertainty associated with the caregiving situation. Caregivers are the link many times between the elderly and formal services. One of the factors that often keep this connection from occurring is lack of knowledge of services available. These programs include meals-on-wheels, legal assistance, home health care, volunteer visitor programs, home-makers assistance and many more. Increased usage of these programs for the elderly is dependent upon public knowledge of their existence.

"According to many recent investigations (e.g., Archbold, 1981; Cantor, 1980; Crossman et. al., 182), what is most needed by caregivers is respite care, which is best defined as a caregiving service that provides a planned, intermittent break from the ongoing responsibility of caring for a chronically disabled individual who is being managed at home."[47] Respite care is a preventive health measure for the caregiver and could possibly delay or prevent institutionalization. In-home respite, day respite, and extended respite (usually involving a formal care institution) are types of respite programs available to caregivers.

> "Huey (1983), in evaluating a respite program in a state owned hospital, reported that families say they 'Feel refreshed and better able to continue caring for their frail elderly at home: as a result of respite.' Crossman et. al., (1981) indicated that wives who participated in a respite weekend expressed "deep gratitude," for the "peace and quiet and rest they were able to enjoy."[48]

The contributions of respite programs are great. Studies indicate improved perception of health both physical and mental and more rest, with an overall improvement in caregiving relationships. Another facet of this program is that it may result in a "desensitization" process as it relates to the prospect of institutionalization. Respite receivers view of formal long term care was less skeptical in most cases following respite services.

Respite, like many support systems, has problems of utilization. "It has been repeatedly observed that families may be desperate for help but hesitant to leave their relatives with a "stranger."[49] Another major difficulty in serving caregivers is dealing with their feelings of guilt about leaving the carereceiver, even for brief periods. Despite the difficulties, "respite care programs reveal a vast and largely untapped potential for strengthening and supporting caregivers in their efforts to preserve an optimum quality of life for themselves and their carereceiver."[50]

Another growing form of support that is proving invaluable to caregivers is Caregiver Support Groups. "Groups for caregiving relatives of frail and dependent older people are part of a long tradition of mutual help that has come into being as individuals banded together to address common concerns."[51] Participating in a caregivers support group can offer numerous benefits.

1) Reduction of feelings of loneliness and isolation through contact with other facing similar situations.
2) Dissemination of information about the aging process and available community resources.
3) Sharing of coping skills, stress management techniques and problem solving.
4) Group participation builds a support network that may go beyond group meetings into enduring mutual help and friendship.

The informal system of care is being overwhelmed. Unfortunately a barrier exists between the formal and informal caregiving systems. "In the future, there could be radical changes in demands for parent care and other long-term support services if bio-medical breakthroughs result in prevention or cure of conditions causing chronic dependency—Alzheimer's disease, for example."[52] It is imperative that a relationship be formed dispelling all the misconception that formal and informal supports have of each other. Until these two systems are linked effectively, caregivers and their care recipients will not receive the support that formal supports could offer them.

10.

There are many friends in our society that will have an impact upon the future of caregiving. The growth of women in the work force, increasing life expectancies, changing values and acceptance of new roles, increasing age of caregivers at time of parents need, and divorce. Each of these, or a combination of several, could result in dramatic changes in the caregiving system.

The growth of women in the work force, especially those entering in their 50's, is capable of bringing about several changes. However, the one change that studies consistently refute as occurring is the lessing of caregiving by this cohort. Work, nonetheless, does conflict with the caregiving role. "In an ongoing study of family support, Elaine Brody selected matched samples of working and non-working women caregivers for study but found that one-fourth of the non-working sample had left jobs in order to provide full time care for a disabled parent."[5] This could cause economic hardships in some families. "We may have the beginnings of a cohort phenomenon where economic factors become primary in caregiving and for which subsidies might well be appropriate and necessary."[54]

Changing values will have an impact on the future of caregiving. Providing care to an elderly parent is no longer the role of women alone; sons are now also being looked to as providers. However, there are findings to indicate tension and conflict still exists between the "new" values about women's roles and the "old" values. For example: "Despite the general endorsement of feminist views of the roles of men and women, and though two-thirds of the

middle generation women were working, they were more likely to expect working daughters than working sons to adjust thier work schedules for parent care."[55] It is viewed, however, as more practical for a woman to pay for care needed for her elderly parent than to leave the work force.

"The gerontological revolution, sometimes referred to as the "squaring of the survival curve," has resulted in the increasing numbers of persons reaching old age. The significant factor of this is that the revolution has not been keeping the healthy alive. "As Morton Kramer has pointed out, the increase of population size coupled with the control of fatal consequences of disability, in the absence of prevention or treatment, are resulting in a world-wide pandemic of mental disorders and chronic diseases."[56] The lower fertility of the 1915-1925 era will mean limited availability of daughters to take on such responsibilities. The delay of childbearing will result in an increased number of women providing care to children under age 18 as well as elderly adults.

While the number of elderly is increasing, so is the age of their potential caregivers. By 1980 40 percent of people in their late 50's had surviving parents, as did 20 percent of those in their early 60's, 10 percent of those in their late 60's, and 3 percent of those in their late 70's. This data indicates that more children will be called on to care for their parents at a time when their own health may be failing. Grandchildren may become an important source of caregivers for the future.

"Divorce has become a significant part of our lives and as the number grows, the potential for remaking such of what is known about intergenerational relations is substantial."[57] What implications this will have on support for the elderly is not known, but new strains and stresses will emerge. The potential of divorce statistic impacting family dynamics and relationships warrants close observation.

Considerable research is needed in all the areas discussed in the future of caregiving. While it can be anticipated that family members will continue to provide the foundation for elderly support, the form of that support is in a transitory state.

11.

As the aging population increases, so will the demands on informal and formal caregivers. These two facets of caregiving, however, could remain separate entities without careful consideration and intervention. There is little doubt that family members comprise the bulk of caregivers, and this is a factor that will most likely remain unchanged. Their roles might fluctuate and grow, but the foundation will remain strong.

Since knowledge has not dispelled the myths of caregiving, perhaps the realistic goal is "Not to slay the Hydra-monster but to render it powerless to impede constructive clinical approaches and a sound social policy."[58] "As gerontologists, we provide facts which are correctives so that policy based on bias and myth does not go unchallenged."[59]

As providers we are faced with a growing field of research and implementation to better meet the growing needs of this population. Like formal and informal support networks we must link our knowledge in order to facilitate caregivers. However, we cannot do it all. Families will continue to care for and about their elderly members. The affection, emotional support, and medical needs of these elderly will continued to be viewed as part of familial responsibility. In no way can their stress and burden be completely relieved, but policies should arise from knowledge rather than social myths if they are to create what Elaine Brody refers to as, "A dependable formal system that forges an effective partnership with the dependable family."[60]

NOTES

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[30]U.S. Government Fact Sheet No. 86-1 (1986) p. 1.

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[32]Brody, p. 380.

[33]Brody, p. 19.

[34]Brody, p. 19.

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ELEMENTARY SCHOOL SOCIAL STUDIES INSTRUCTION: ARE IMPROVEMENTS IN ORDER?

Grace Leann Riley

Anyone who has taught in or who has visited an elementary classroom in recent years has noticed a trend concerning the teaching of social studies. Unlike trends in computers, math, and reading which motivate children to learn and teachers to teach, the trend in social studies is sadly one of neglect. It is not unusual to find that when class time for reading or math is interrupted, it is made up during time designated for social studies. When the time approaches for standardized testing, social studies and other areas not tested are discontinued while extra emphasis is placed on the list of basics.

There are various reasons one can attribute to the lack of "good" social studies instruction in the elementary school, particularly the primary grades; however, it is possible to improve the teaching of social studies by making it more interesting and meaningful for both the student and the teacher.

Jacob L. Susskind (1984) offers four main reasons for the lack of instruction in the area of social studies. First, he believes that the "back-to-basics" movement has had a direct impact. Teachers imply that due to the time spent on reading and math they no longer have time for other areas. Second, some teachers view social studies as an area which may cause controversies, upsetting both parents and students. A third reason, which may actually be the most common problem, is the teacher's inadequacy in the area. Although most teacher education programs require courses in history and social sciences, teachers are highly unlikely to receive training in geography and economics. The final reason stated by Susskind is the idea that our technological world no longer has a need for social studies education. This, however, is a terrible misconception because these programs help to ensure that the youth of our nation will be able to sustain a democratic society and get along in an interdependent world.

Social studies is being overlooked in many primary classrooms, but one may question what impact this oversight actually has on students. Social studies is necessary for everyday living. Educaion in this area helps children learn to be responsible citizens, which is necessary in the democratic society. Proper instruction will help students become better problem solvers. The children will learn about and hopefully better understand their heritage, as well as be able to improve upon human relationships. Other practical ideas obtained through social studies which help one to exist in society are economic decision making and as map skills which enable a person to get from one place to another. Without this knowledge in the early years of education, children will grow into adults unable to function in our world (Susskind, 1984).

The problem has been identified: Social studies is not getting the necessary recognition that it needs in the primary school curriculum. One must now address general ways in which to improve the situation. In his article, Susskind specifies four general improvements that need to occur before specific changes can be made.

First, teachers and administrators must realize the critical need for social studies education. If they realize this necessity, then they will surely implement a better curriculum. Second, teachers need to build instruction on the child's experiential level. In the primary grades it is senseless to teach abstract ideas; instead teachers should build on topics that directly affect the students. Third, teachers should recognize that social studies needs to include both content and process. That is, it deals not only with facts and concepts but also the processes by which the content is learned (i.e. problem solving or inquiry). Social studies should be holistic, teaching how to think, not what to think. Finally, educators need to see the need to integrate social studies with other areas. Social studies can easily be integrated with literature, science, and math, as well as other areas (Susskind, 984). This idea of integration is also suggested by Charlesworth and Miller (1985). They believe that social studies should "be a thread through the entire school day."

Although the above are general suggestions to improve social studies instruction, there are many specific ideas that can be used to make this instruction more exciting. Often social studies is merely an extension of reading. The children participate in "round-robin" reading of their text. The texts themselves are not stimulating; therefore the students are uninterested and the teacher is equally unenthusiastic. However, there are many innovative ideas which can make social studies exciting for the teacher, and in turn, exciting for the pupils. The basic skills of social studies can be taught in various ways within the early childhood classroom. Learning centers, which are found frequently in the early levels, can be used to promote social education. A block center is also a good idea. It promotes social skills such as cooperation, self-esteem, and sharing. It is also an excellent way to integrate math and vocabulary into social studies. Also suggested is role playing in connection with the unit the children are studying. Role playing can be used with a "play store" in which economics is stressed or it can be used to assist children in problem solving of social issues.

Art centers can be used to make items that correlate with their unit. Many geographic concepts can be developed in an art center. Library and reading centers can also be utilized to relate to every area of social studies. Daily classroom activities may be used to help teach social studies concepts

in the areas of history, economics, political science, ecology, current events, career education, social skills and attitudes and values. All of these ideas can be used in place of or in conjunction with a regular social studies text (Charlesworth and Miler, 1985).

Although economics tends to be a hard concept for college students to understand, elementary students can easily be taught the basic elements of economics (Yeargan and Hatcher 1985). An activity in a San Antonio, Texas, elementary school has third graders discussing, as well as comprehending, principles such as margin of profit, division of labor, and productivity. These students participate in a unit which forms a corporation that enables them to learn about economics and the decision-making process of a business. The class forms a Cupcake Factory. They visit area bakeries to learn about prices, services, marketing strategies and also develop the concept of supply and demand and competition. The students survey the school to find the product which would be the most marketable and what location would bring about the most sales.

Four committees are formed. The purchasing committee watches for low prices on the key ingredients. The finance committee sells stock to students in the classroom at ten cents a share and gives them certificates verifying their stock. The committee also realizes the necessity for additional capital so they actually apply for a loan, in turn, learning the meaning of credit, interest, and contract. The advertising committee reviews tactics used in newspapers and magazines and makes their own advertising posters as well as making announcements over the public address system. The production committee plans the most efficient production and establishes crews to do the necessary work. The cupcakes are made, then sold, and a profit results. These students not only get a hands-on introduction to economics but develop skills in reading, writing, computation, and decision making.

Just as the concept of economics can be taught, so can law-related ideas be introduced to primary pupils. The American Bar Association has listed three major objectives that elementary students should be introduced to. They believe that reflective decision making, empathy toward others, and ethical judgements should be stressed (Schuncke and Krogh, 1985). Children must be guided in decision making early in their education. Jean Piaget and Maria Montessori both believe that the burden of decision making shold be placed on children. Along with making decisions, students need to evaluate the effects of their decisions on others and put themselves in someone else's shoes in order to make mature judgements about moral problems.

Teaching strategies suggested for these law-related concepts are structured discussion and role playing. In structured discussion a problem is defined that includes conflict between two of the following: telling the truth, keeping promises, respecting property, obeying rules, and obeying authority. Students are given an open-ended story and are told to resolve the problem. They are instructed to discuss the consequences of each alternative and then choose the most appropriate solution. All of this is done with close supervision of the process by the teacher.

In role playing, the same process as structured discussion is followed; however, the students act out the situation and possible alternatives. The alternatives are discussed, and the solution is chosen. In both methods the students are constantly asked to provide sound rationale for their decisions. Both of these strategies, structured discussion and role playing, have provided children with direct experience in decision making that was endorsed by Piaget and Montessori (Schuncke and Krogh, 1985).

One other specific method to help improve instruction in social studies and motivate students is to use microcomputers. Many elementary teachers have computers in their classroom or have access to a computer at designated times. This provides an excellent opportunity to integrate computers with social studies. Computers can be used to teach and reinforce new concepts; and problem solving activities can be provided, as well as simulation games which may reenact actual events.

Teachers may use authoring systems which will allow them to write programs that can drill and review facts being taught in the current unit. Simulations can be used in which children are asked to make important decisions that directly affect the outcome of their adventure. They may make financial decisions, travel-route decisions or many other types of decisions that involve social studies skills. A simulation on computer can lead to many creative writing activities for the student (Cacha, 1985).

It is apparent that there is a definite problem with the lack of good social studies instruction. There are many reasons why teachers omit this instruction, especially in the primary grades; however, educators must realize the importance of social studies and begin to implement a better curriculum. Social studies can be integrated into almost every subject area and the basic skills can be taught in the early childhood classroom. Interesting programs in economics, law-related education, and microcomputers can be introduced into almost any classroom. The bottom line appears to be that before students can become interested in social studies teachers must be interested and realize its value to a child's education.

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ERNIE PYLE: JOURNALIST WITHOUT PEER

LaMont Jones

"The most widely read columnist from the battlesfields of World War II was Ernie Pyle, whose writings save out the ring of the genuinely likeable man. His readers responded to his deep humility and his appealing sensitivity." (1)

Like a meteor hurtling from outer space and bashing a place for itself as it crashes to the earth, so did Ernie Pyle make an impact on people and the very act of journalism in the 1930s and 1940s. Like so many average-men-turned-heroes, Pyle's life began in an obscure place in a not-so-promising environment.

He was born Ernest Taylor Pyle on August 3, 1900, in Dana, Indiana. It seemed that Ernie, as his parents and friends called him, was always eager to take the easier path. To set away from farm chores, he entered Idniana University in 1919, and he choose journalism as a major not because he liked to write but because he heard it was easy. (2)

Pyle moved quickly up the chain of command at the *Daily Student,* IU's student newspaper. After a year and a half as editor, he suddenly decided to quit college. He used university connections to land a job at the *Washington Daily News,* a struggling new paper. His career there was like a roller coaster. He was such a good writer that he was allowed to try a hand at copy editing. He did that so well that when the managing editor was fired one day the editor looked across the newsroom, saw Pyle, and appointed him managing editor. (3)

Pyle thought he would like his new job, and at first he did. But he soon found that after he had taken care of all his editorial and managerial responsibilities, he had very little time or energy to write. Writing was and always would be his first love, so he asked to resign from the position. At the same time, he asked permission to begin writing regular columns. His boss did the paper—and newspaper readers across the country—a favor by saying yes. (4)

Pyle became quite a roving reporter, crosscrossing continental United States in search of the common man. He talked to everyone: the Indian chief in North Dakota, the dairy farmer in Wisconsin, the bespectacled antiquist in New Mexico. From these interactions he produced some of the most flowing and colorful human interest columns ever. He soon became the national Byron Crawford of his day. Pyle didn't know it, but these innovative cross-country tour columns were honing his skills for the production of "superb personal glimpses of American fighting men in World War II." (5)

Pyle's style was to avoid formal interviews, to observe and take notes only for names and addresses. (6) His curiosity, sharp mind, and relentlessness kept him ahead of the competition. For instance, before the United States got militarily involved in World War II, he was documenting Germany's bombing of London on site for the *Washington News,* a Scripps-Howard paper. (7) Eventually Pyle grew so popular with the U.S. troops that whenever he came around, scribbling in his little reporter's notebook, they would converge on him like pigs on slop, requesting autographs and stories of developments on the other fronts. (8)

Pyle willingly told all. He was so free with information that out of loyalty and genuine admiration, GI's would pour out their innermost secrets and thoughts to him. So intense was their admiration for him that "It sometimes seemed that almost every American GI in World War II knew Ernie Pyle, and it wasn't at all unusual for soldiers to seek his autograph in the midst of battle." (9)

Here is one of Pyle's particularly colorful and well-written accounts of a group of American infantrymen. See if he makes you feel as if you are also marching in Tunisia in 1943:

> Their walk is slow, for they are dead weary, as you can tell even from looking at them from behind. Every line and sag of their bodies speak their inhuman exhaustion . . . On their shoulders and backs they carry heavy steel tripods, machine-sun barrels, leaden boxes of ammunition. Their feet seem to sink into the ground from the overload they are bearing.
>
> They don't slouch. It is the terrible deliberation of each step that spells out their appalling tiredness. Their faces are black and unshaven. They are young men, but the grime and whiskers and exhaustion make them look middle-aged.
>
> In their eyes as they pass is not hatred, not excitement, not despair, not the tonic of their victory—there is just the simple expression of being here as though they had been here doing this forever, and nothing else. (10)

It is through such writings that Pyle developed a special relationship with U.S. soldiers, a relationship that cannot be understated. Because of his accurate portrayals of their lives during the war, they trusted and respected him. And because he earned their trust and respect, he became their unofficial spokesman. (11)

Though a great reporter and writer, Pyle had a less than glamorous personal life. Behind the engaging, magnetic, and some would even say hypnotic personality was a lingering self-doubt. Pyle and his wife, Jerry, were heavy drinkers, she particularly. After building a home in Albequerque, the couple briefly and painfully separated. He continued traveling and writing. She entered a sanitorium to deal with her depression and alcoholism. They reunited about a year later. (12)

He won the Pulitzer Prize for correspondence in 1944 at the age of 44 because of his brilliant, down-to-earth columns on the common soldier in World War II. Following is an excerpt from "Soldier Dies on a Moonlit Night," a column on the reaction of a company of American soldiers in Italy to the death of their captain. It was printed on Jan. 10, 1944, for the Scripps-Howard Newspaper Alliance: (13)

> I was at the foot of a mule trail the night they brought Captain Waskow down. The moon was nearly full, and you could see far up the trail, and even part way across the valley below.
>
> Dead men had been coming down the mountain all evening, lashed onto the backs of mules. They came lying belly-down across the wooden pack-saddles, their heads hanging down on one side, their stiffened legs sticking out awkwardly from the other, bobbing up and down as the mules walked.
>
> The Italian mule skinners were afraid to walk beside the dead men, so Americans had to lead the mules down at night.
>
> Even the Americans were reluctant to unlash and lift off the bodies when they got to the bottom, so an officer had to do it himself and ask others to help.
>
> I don't know who that first one was. You feel small in the presence of dead men, and you don't ask silly questions. They slid him down from the mule and stood him on his feet for a moment. In the halflight he might have been merely a sick man standing there leaning on others. Then they laid him on the ground in the shadow of the low stone wall beside the road. We left him there beside the road, that first one, and we all went back into the cowshed and sat on water cans or lay on the straw, waiting for the next batch of mules. (14)

Pyle left Europe in 1944 to take a much-needed break from the fast-paced war coverage. Perhaps he should have rested longer. On April 16, 145, he arrived on Ie Shima, a small Pacific island that had just experienced some of the worst fighting of the war. (15) The next day as he was riding in a jeep with a GI, a Japanese sniper shot him through the left temple. He died instantly. Two days later he was buried on the island, but his body was eventually moved to the National Memorial Cemetery in Honolulu. His wife's health deteriorated rapidly and she died the next November. (16)

By his death Pyle's writings were being published in more than 400 daily papers six times a week. Moreover, even the condensed versions of his articles were devoured by readers of more than 300 weekly papers. (17) Critics have been justifiably kind to Pyle, heaping lavish praise on his interviewing and writing techniques. Consider this assessment:

> Pyle's success was deserved. He was a superb reporter and writer. Competing not only with hundreds of other journalists but also with literary figures like Hemingway and Steinbeck, he was the best. (18)

Arnold R. Isaacs, a writer from Maryland who was a war correspondent in Vietnam, paid homage to Pyle on the forty-second anniversary of Pyle's death:

> Pyle's writing still has the power to make us feel something of what war is and what it does to the ordinary men who fight it. His memory belongs to the successors of the soldiers of whom he wrote with such affection and sympathy—but it belongs also to his successors in journalism, whose wars had the same suffering but different causes and circumstances and meanings. (19)

NOTES

(1) *Journalism in America,* Thomas Elliott Berry, New York, 1968, p. 236.
(2) *Ernie Pyle: Chronicler of "The Men Who Do The Dying,"* Paul Lancaster, *American Heritage,* Feb./March 1981, p. 30.
(3) Ibid.
(4) Ibid.
(5) *The Press of America,* Edwin Emery, New Jersey, 1972, p. 498.
(6) Lancaster, p. 30.
(7) *Development of American Journalism,* Sidney Kobre, Iowa, 1969, p. 685.
(8) Ibid.
(9) Lancaster, p. 30.
(10) Ibid.
(11) Ibid.
(12) *Pyle,* Percy Moore, New York, 1983, p. 35.
(13) *The Best of Pulitzer Prize News Writing,* Wm. David Sloan, Valarie McCrary and Johanna Cleary, Ohio, 1986, p. 220.
(14) Ibid.
(15) Emery, p. 530.
(16) Lancaster, p. 30.
(17) Lancaster, p. 32.
(18) Ibid.
(19) "Ernie Pyle's Legacy," Arnold R. Isacs, *The Courier-Journal,* April 18, 1987, Section A, p. 8.

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LARRY BURROWS AND MODERN WAR PHOTOGRAPHY

Leslie Page

Those who knew *Life* photographer Larry Burrows in Vietnam came to think of him as invulnerable. He covered the war for nine years, often at the scene of the most intense fighting, and always came out unscathed. Other photographers tried to stay close to Burrows, believing they would be safer there.[1]

Burrows didn't seek danger for danger's sake, and he certainly had no death wish. He was just a perfectionist with photography, and he did whatever was necessary to get good pictures.[1] Talking about the dangers of the battlefield, Burrows said, "I have a sense of the ultimate—death, and sometimes I must say, 'To hell with that.' "[3]

Larry Burrows was taking another risk to be the first with pictures of the expanded war in Laos when his luck ran out February 10, 1971. Journalists were barred from traveling on U.S. helicopters into Laos, so Burrows managed to hitch a ride on a South Vietnamese Army helicopter.[4] In the mist of the Annamite Mountains, the helicopter in which burrows was riding lost its way and wandered into heavy anti-aircraft fire. One chopper exploded in mid-air and another crashed. An observation pilot sent out the next day could see no survivors.[5]

Burrows was killed in the crash along with Henri Huet of AP, Kent Potter of UPI, and Keisaburo Shimamot of *Newsweek*.[6] Only 44 years old when he was killed, Burrows had already come to be considered by many one of the greatest war photographers of all time.[7] Jorge Lewinski writes in *The Camera at War:*

> . . . for total commitment and involvement in the subject as well as for the sheer power and beauty of his images it would be hard to find his peer.[8]

Former managing editor of *Life*, Ralph Graves, called Burrows "the single bravest and most dedicated photographer I know of."[9]

How did burrows come to earn such high praise and how did he become such an accomplished war photographer? His first experience with war was as a teenager in London during World War II. Recalling those years, Burrows said:

> When I was in London during the blitz, I didn't have the equipment or the ability to express my feelings about war—that has a great deal to do with my feelings now—to show the interested and shock the uninterested people into realizing and facing the horrors of war.[10]

Burrows had been turned down for military service for health reasons and assigned to work in the coal mines. He had been excused from that duty because he developed claustrophobia. He had started working part-time in *Life's* London photo lab at age 16."[11] Through his work at the lab and his association with talented *Life* photographers, Burrows learned much about the technical aspects of photography. He soon worked his way up to making pictures for the London bureau.[12]

It was in the *Life* darkroom that Burrows had an unfortunate encounter with the greatest war photographer of the time, Robert Capa. In processing Capa's pictures of the Normandy invasion, Burrows turned on too much heat when drying the film. All but eight of Capa's exposures were ruined.[13]

His first assignments were copying paintings for *Life* features on art. Several years of photographing the work of the masters taught him composition.[14] Burrows' first experience with war photography came in 1956 during the Anglo-French invasion of Egypt.[15] After that he covered conflicts around the world, including Iraq, Lebanon, Iran, Cyprus and The Congo.[16]

It was the Vietnam War, however, that brought burrows to prominence. He went to Vietnam in 1962, and that year his name appeared on *Life's* masthead for the first time as a staff photographer.[17] His first *Life* cover picture ran the next year.[18] At first Burrows assumed the attitude of a professional photographer, making the most of an opportunity to further his career in the war. After all, many reputations had been taken in earlier wars.[19] Burrows thought the war was a good cause and got caught up in the excitement of battle. His early pictures showed bravery, daring and gallantry.[20]

The longer Burrows stayed, however, the more his attitude toward the war changed. After seeing more and more suffering and witnessing the lack of commitment to the war among the South Vietnamese, Burrows came to oppose the war. His new attitude showed in his pictures.[21] His most famous picture story was about the crew of Yankee Pap 13, a Marine helicopter. Burrows followed a futile rescue attempt and closed the story with a photo of a weeping soldier.[22]

Burrows did two stories showing the effects of the war on children. The story on Lau showed a 10-year-old boy who was paralyzed from the waite down by a mortar fragment. He spent two years in the States getting treatment, and when he returned home, he was rejected by family and friends because he had become "Americanized."[23] Burrows wanted to show the sadness and the horrors of war to influence the people back home on the subject of Vietnam. At the sme time, Burrows shielded his audience from too much horror. He wanted people to "look and feel, not revulsion, but an understanding of war."[24]

Taking pictures of people suffering caused Burrows to do a lot of soul searching. He sometimes felt he was intruding in people's privacy, and he wondered if he was using the grief of others to further his career. He decided that showing

what the war was really like justified his actions.[25] What Burrows wanted most was to be able to photograph Vietnam at peace. He would do other safer assignments, but he always returned to Vietnam. He called the war his story.[26]

In covering that story Burrows received much recognition. He won the Robert Capa Award twice, in 1963 and in 1965. This award is for "superlative photography requiring exceptional courage and enterprise."[27] In 1967 he was named Magazine Photographer of the Year in the University of Missouri Picture of the Year Contest. This recognition was for his war coverage as well as his feature pictures.[28]

Burrows did not want to be considered just a war photographer—he considered himself more well-rounded than that. He shot a wide range of news and feature assignments in his years at *Life*.[29] His first assignment in the Far East was a 65-year-old surgeon in Burma.[30] Burrows produced an essay reminiscent of W. Eugene Smith's essay on Albert Schweitzer. Between tours of duty in Vietnam, Burrows photographed beautiful color essays on the Taj Mahal, the temples at Angkor Wat and the birds of paradise in New Guinea.[31]

His last assignment away from Vietnam was the aftermath of a cyclone and tidal wave in East Pakistan. He made some of the best pictures of the mass destruction in that very poor country.[32]

Even though his other work would place him among the best photographers, Burrows will be remembered for his powerful pictures from Vietnam. Many of the best known pictures from that war were made by Burrows.

The Vietnam war produced quite a bit of questioning and soul-searching in American society; and war photographers, in addition to encouraging that questioning, asked some rigorous questions of themselves. The result was a group of photographers that looked more deeply at war and put more of their viewpoints and feelings into their pictures than had earlier photographers. W. Eugene Smith in World War II and Duncan in Korea started the process of changing war photography, of making it more personal and interpretive. But it was in Vietnam that war photography took on the status of an art form.[33]

NOTES

[1]Ralph Graves, "Larry Burrows: Photographer," *Life*, 19 Feb. 1971, p. 3.

[2]*Larry Burrows, Compassionate Photographer*, (New York: Time, Inc., 1972), n. page.

[3]"This Strange War Fascinates Me," *Time*, 22 Feb. 1971, p. 70.

[4]"The Edge of the Sword," *Newsweek*, 22 Feb. 1971, p. 55.

[5]"Edge," p. 55.

[6]Graves, p. 3.

[7]Phillip Knightly, *The First Casualty* (New York: Harcourt, Brace, Jovanovich, 1975), p. 408.

[8]George Lewinski, *The Camera at War* (New York: Simon and Schuster, 1978), p. 215.

[9]Graves, p. 3.

[10]*Larry Burrows*, n. pag.

[11]*Larry Burrows*, n. pag.

[12]*Larry Burrows*, n. pag.

[13]Lewinski, p. 130.

[14]*Larry Burrows*, n. pag.

[15]*Larry Burrows*, n. pag.

[16]"This Strange War," p. 70.

[17]"Four Lost Photographers Presumed Dead," *New York Times*, 3 March 1971, p. 6.

[18]"Vietnam: A Compassionate Vision," *Life*, 26 Feb. 1971, p. 35.

[19]Lewinski, p. 21.

[20]Lewinski, p. 21.

[21]*Larry Burrows*, n. pag.

[22]Lewinski, p. 214.

[23]Lewinski, p. 215.

[24]Knightly, p. 409.

[25]"Vietnam," p. 38.

[26]Graves, p. 3.

[27]"This Strange War," p. 70.

[28]"Four Lost Photographers," p. 6.

[29]"Four Lost Photographers," p. 6.

[30]*Larry Burrows*, n. pag.

[31]*Larry Burrows*, n. pag.

[32]"This Strange War," p. 70.

[33]Lewinski, p. 201.

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